Faculty of Arts
University of Helsinki

LATE CLASSICAL – HELLENISTIC FORTIFICATIONS IN EPIRUS

FOURTH TO SECOND CENTURY BC

Mikko Suha

DOCTORAL DISSERTATION

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Dedicated to my dear wife, Johanna,
and our children,
Laura, Otto and Emilia.

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ABSTRACT

This dissertation, based on five published papers, examines the military architecture of the Late Classical and Hellenistic fortifications of Epirus. These consist of civic enceintes or "city walls", fortresses and towers built between the first half of the 4th to the middle of the 2nd century BC. The sites are scattered all over ancient Epirus, which in today's geographical terms consists of the northwestern corner of Greece and the southernmost part of Albania. The study area, some 200 by 70–90 km in extent is littered with vestiges of at least a couple hundred fortified sites, the majority of which are of an "ancient" date (i.e., built of two faces of large, shaped stone blocks and filling, wholly without mortar).

The present work consists of the preface, the five papers I–V that were published in volumes of the peer-reviewed publication series Papers and Monographs of the Finnish Institute at Athens (henceforth PMFIA), plus three appendices. Four out of the five articles were published in the four final volumes of the *Thesprotia Expedition*, an interdisciplinary project carried out between 2004 and 2010 with the aim of writing the diachronic history of the Kokytos River Valley in Thesprotia in the northwestern corner of Greek Epirus. I participated in the fieldwork part of the project for its entire duration, during which time I had the opportunity to study three fortification circuits in the valley in detail and subsequently publish the results. One longer article is based on a paper given at the Greek Architecture workshop at the Finnish Institute at Athens (henceforth FIA) in May 2014, which is to be published in the proceedings of the workshop in the PMFIA.

The first two constituent papers are short, concentrating on two nearby forts in the Kokytos Valley, Agios Donatos and Kioteza. These papers explore the fortifications and the building date of the enceintes through field observations and excavation results, and also analyze the remains of the fortifications. The third paper examines the formidable walls of Elea, the main ancient settlement of the same valley, with the aim of dating the construction time of the enceinte. The fourth and fifth papers are longer syntheses of different architectural and defensive features found in fortifications all over Epirus. The fourth paper examines the coverings of the gates and posterns of Epirote fortified sites, which consisted of either *corbelling* or false vaulting, or more advanced, self-supporting *true arches*. The last paper examines the development of different enfilading methods consisting of right-angled offsets of the wall trace known as *jogs* or *indented trace*, towers, and large catapult batteries. In addition, the different defensive weaponry options, either hand-held weapons or pedestal-mounted artillery pieces (i.e., catapults which could have fit in the tower chambers of the enceintes) are considered in the paper.

Appendix I is the Index of Sites, listing all of the site names and aliases mentioned in the text, Papers I–V and the site list. Appendix II is the single

most important part of this study. It is a listing of the fortified sites of Epirus and their UTM coordinates, set in accompanying map sheets with a short introduction of the military architecture of the site. The information therein was gathered both from the literature and personal visits to various sites. Appendix III is a re-evaluation of the reconstruction drawing of the tower of Agios Donatos thirteen years after the original study, which also closes the circle by returning to the same issues where this all began.

The study aims to present the different types of fortifications in Epirus, and the details of the different architectural and structural elements. In other words, it aims to answer the questions: What kind of fortified sites were there in Epirus, and how many can be classified in each category? Are the different architectural and structural features useful in dating the Epirote fortified sites and are there some important, rare, or unique structural features that are discernible?

ACKNOWLEDGEMENTS

I am grateful for all of the financial support I have received over the years. The first grant I managed to secure was for one year through the Foundation of the Finnish Institute at Athens in 2013, which enabled me to advance my studies, collect material from libraries in Athens, and to apply and obtain study permits to document the seven sites that form the basis of Papers IV and V. I am equally grateful to the Ateenan-instituutin Ystävät ry, whose scholarship obtained in the spring of 2015, enabled the last study trip in connection with the present study as well as the start of the writing process of Paper V. Last, but certainly not the least, my profound gratitude goes to the University of Helsinki, the Doctoral School of Humanities and Social Sciences, the Doctoral Program in History and Cultural Heritage, whose one-year salaried doctoral student position enabled me to finish the work.

Of all the people who have supported me throughout this process, my deepest gratitude goes to Dr. Björn Forsén, the director of the Thesprotia Expedition and its offshoots, as well as the former director of the FIA (2003–2007 and 2017–2020). Without the Thesprotia Expedition and his strict guidance, my master's thesis would not have come to fruition, not to mention the subsequent articles forming the basis of this dissertation. Thanks to his strict, and at times very demanding guidance –with my drafts returned to me a myriad of times, occasionally with fundamental alterations to the text required and countless instances with some minuscule detail requiring attention –the first paper was finally wrestled into a publishable form. I must have learned something through the laborious process, as my subsequent articles were accepted without too many alterations and ever fewer returns. He was also instrumental in encouraging me to publish the papers based on work conducted during the field seasons, and to compile the papers into a dissertation.

I am equally indebted to another former director of the FIA (2013-2016), Professor Jari Pakkanen of King's College, Royal Holloway University of London, who is likewise an exemplary scholar utilizing the latest computer aided data processing, mapping and measuring equipment available. He has taught me by far the most on all such programs, total stations and their usage. Furthermore, I can never forget that it was thanks to him that I even had my first opportunity obtain first-hand contact with Greece and its fascinating archaeology; in the spring of 1999, Pakkanen, then Assistant Director of the FIA, notified the then assistant Mika Lavento at the Department of Archaeology at the University of Helsinki of the possibility of FIA funding for a single Finnish student to participate in the Norwegian Arcadia Survey, NAS, about to take place in the following summer at Tegea in the Peloponnese. At that time, the Institute did not have any archaeological research projects of its own, although slightly later in the summer the first Finnish field project, the

excavation of the basilica at Paliambela was initiated near Thessaloniki. The student position with the NAS was offered to different people at the Department of Archaeology, but was fortunately turned down until it was eventually offered to me, a wet-eared second-year student with only a very limited knowledge of Greece –or practically anything at all! Since that first field season in the Peloponnese, however, I have not looked back. The Tegea Survey, the wonderful people I met there, and the weekend excursions all over the Peloponnese driving a small Citroen over-stuffed with people certainly showed me what would eventually become my path.

Mr. Esko Tikkala also deserves my sincerest thanks. He was the Assistant Director of the FIA during the time when I was struggling to compile my master's thesis and helped in various ways then, and even more so later. In a way he is a combination of the two previously mentioned scholars: demanding, strict, and absolutely pedantic when needed, but with an equally profound knowledge of all things computerized, all combined with a weird northern Finnish sense of humor. Thanks to his patient repetitions in teaching the use of GPS, different GIS and CAD programs as well as various total stations, I have been able to reach this stage of completion.

I am naturally ever so grateful to Mrs. Johanna Yläranta-Suha, my wife of twelve years at the time of this writing, and the mother of our three wonderful children. She has been long-suffering but incredibly patient and supportive, even though my work hit rock bottom several times over the last ten years through infinite and mostly fruitless struggles trying to secure funding. The first week-long study trip to Ioannina with the aim of collecting data for the last two papers in December of 2013 was an unforgettable experience for both of us, I am sure. Incidentally, the trip also served as our honeymoon, which could not take place after the wedding in June 2007. In Ioannina, we were lucky to have wonderful, sunny, but nicely cool weather for the whole week and her assistance and company was invaluable. On the first day of fieldwork on the summit of Megalo Gardiki, she received a fifteen-minute crash course on measuring with a total station, after which I started climbing the walls with a prism stick in hand while she successfully shot hundreds of points per day with absolutely no previous experience on the instrument. The wood-smoky evenings in cold, beautiful Ioannina are also something to remember, as is also the local tavern keeper, who, upon seeing us use the German menus at hand, decided to tell us what he thought of the country in question in quite a memorable way. Eventually he did apologize, however, upon hearing that we were Finns: Bjørn Daehlie, the great Finnish (sic) skier was greatly complimented!

I am also grateful to both Marias of the FIA, Mrs. Maria Martzoukou and Mrs. Maria Gordouba for helping me with all things Greek, from obtaining library and archaeologist cards to study permits and some literature unavailable here as well as all the assistance I have received over the last thirteen years. Ευχαριστώ πάρα πολύ!

I also owe thanks to my friend Mr. Tommi Turmo who stepped in as a research assistant in place of Johanna when she was unable to attend the later fieldwork trips in May 2014 and April–May of 2015. Tommi is the best possible company in the field; being funny and witty, he always seems to maintain a sunny disposition regardless of the circumstances. In addition, he also possesses better skills in Greek, which was very helpful in different situations, and we both share an equally refined taste in the varieties of cheap beers and "meat cones" (i.e., gyros pittas) available. Using the services of local gyros pitta establishments as the sole providers of our field trip dinners helped me to stay within budget during both trips in 2014 and 2015. Furthermore, it should not be forgotten that Tommi was the one who introduced me and the other participants of the Thesprotia Expedition to the deliciousness of Toumba Libre and, occasionally merely one of its ingredients, the retsina Malamatina. Every now and then, a bottle of the wondrous concoction still finds its way to our home fridge.

Likewise, my gratitude should be expressed to the following people. Professor Mika Lavento for recommending me for the first fieldwork season at Tegea, the encouraging comments on my master's thesis, and frankly for all the encouragement and help during the last twenty years. Professor Lars Karlsson for the encouraging comments on my master's thesis and the supervision of my PhD thesis, and Dr. Maria Pretzler for her excellent guidance during our weekend trips all around the Peloponnese in the three seasons of the NAS. Seeing so many sites in breathtaking mountainous environments in just a few weeks truly ignited my interest in Greek archaeology, the most memorable sites being the Arkadian sites of Orchomenos, and Mantineia, but above all Messene and its beautiful city walls. It is no wonder that fortifications turned out to be my cup of tea. I would also like to thank Ms. Isa Loo for the language revision of this preface and the appendices; moreover, thanks to befriending this quirky Aussie participating in the NAS (1999), I learnt so much of the English language while practicing a few weeks on site that I can positively say that I owe most of my current English skills to our discussions during the fieldwork, our free time, and the subsequent snail- and e-mails. I would also like to thank Mr. Christos Spanodimos, a fellow Epirote fortification scholar who provided me with new guide books on different sites, comments, and local information; Dr. Silke Müth-Frederiksen, whom I first met at the Greek architecture workshop in 2014, and who commented encouragingly on my presentation, about which I was deeply worried at the time, and via whom I was able to get my hands on the exemplary dissertation of Judith Ley and the vast amount of knowledge within. Last but not least, I would like to thank Dr. Michael Eisenberg for accepting my paper for the incredible conference "The Art of Siege Warfare and Military Architecture from the Classical World to the Middle Ages" at Haifa in February of 2017, thus allowing me to participate for the first time in an international conference that focused on subjects about which I actually have something to say, as well as to meet a number of experts in the field. The

conference was truly an eye-opening event with interesting papers and incredibly well organized pre- and post-conference excursions covering more than half of Israel, from the northern tip of the Golan Heights to Masada within the space of five unforgettable days.

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LIST OF ORIGINAL PUBLICATIONS

This thesis is based on five papers published in peer-reviewed series. The papers are referred to in the text by their Roman numerals:

I M. Suha, 2009: "The Fortification Walls of Agios Donatos". In B. Forsén (ed.), *Thesprotia Expedition I. Towards a Regional History* (Papers and Monographs of the Finnish Institute at Athens, vol. XV), Helsinki 2009; 119–132.

II M. Suha, 2011: "Further Observations on the Hellenistic Fortifications in the Kokytos Valley". In B. Forsén & E. Tikkala (eds.), *Thesprotia Expedition II. Environment and Settlement Patterns* (PMFIA XVI), Helsinki 2011; 203–224.

III M. Suha, 2016: "The Walls of Elea. Some thoughts concerning their typology and date". In B. Forsén, N. Galanidou & E. Tikkala (eds.), *Thesprotia Expedition III. Landscapes of Nomadism and Sedentism* (PMFIA XXII), Helsinki 2016; 311–340.

IV M. Suha, forthcoming: "Vaulting and Corbelling in Epirote Fortified Sites". To be published in the proceedings of the workshop "Greek Building Projects" held in the Finnish Institute at Athens in May 2014, edited by Jari Pakkanen in PMFIA; 1–37.

V M. Suha, 2019: "Towers, Batteries and Indented Trace: Enfilading in Epirote Fortifications". In B. Forsén (ed.), *Thesprotia Expedition IV. Region Transformed by Empire* (PMFIA XXIV); Helsinki 2019, 49–102.

ABBREVIATIONS

etc.	et cetera
i.e.	id est
e.g.	exempli gratia

1 INTRODUCTION

‘Ηπειρος –Epirus –translates as “the Mainland” in English, as opposed to Corfu and the other islands of the Ionian Sea.[1] Although the Epirus of today consists only of the northwestern corner of Greece, its ancient equivalent, as examined in this study, was considerably larger. In modern geographical terms, ancient Epirus encompassed not only the northwestern part of Greece from the Ambracian Gulf northward, but also the southern part of Albania to the level of the northern tip of the Karaburun Peninsula on the Gulf of Vlorë. The study area measures roughly 200 km from south–southeast to north–northwest by 75–85 km from east to west.

Within this area, are scattered the remains of well over 200 fortified sites of different periods, including city walls and lesser civic enceintes, acropoleis, fortresses, and single towers of military or agricultural character; however, their interpretation varies depending on the literature. Of these sites, by far the majority are constructed of an “ancient” style of masonry (i.e., built of two faces of large carefully shaped stone blocks, in between which is an infill of compacted earth and rubble). The shape of the blocks used defines the masonry as polygonal, ashlar, or trapezoidal. When built without mortar they pre-date the Roman occupation, and are thus roughly Classical–Hellenistic or earlier. Of these, only a relatively few have ever been studied in detail.

My interest in the area initially began in May 2004 with the start of the Thesprotia Expedition, a multidisciplinary research project under the auspices of the Finnish Institute at Athens (FIA) and directed by Dr. Björn Forsén. The project concentrated in the Kokytos river valley in Thesprotia, with the aim of writing a diachronic history of the area. The fieldwork part of the project (in which I participated for its entire duration from 2004 to 2010) involved archaeological surveys of the valley floor, the surrounding foothills, and the archaeological excavation of several different sites around the research area. From 2005 onward, one of the focal points was to excavate the ruined fortress of Agios Donatos, which had never been studied in detail. The remains of the enceinte was proposed as the subject of my M.A. thesis, which was completed in 2007.[2]

The fortifications of Agios Donatos were excavated during three field seasons from 2005 to 2008, after which the focus of the research moved on to the subsequent Roman occupation phase of the site, the large *villa rustica*

[1] Hammond 1967, 3. The Latinized form Epirus, not the Greek form Epeiros, was used consistently in the English language source material, thus I follow the English transliteration.

[2] M. Suha 2007: *The Walls of Agios Donatos Zervochoriou. A Case Study of a Fortress in Thesprotia, North-Western Greece*. Unpublished M.A. thesis, available in http://urn.fi/URN:NBN:fi-fe20072065; http://hdl.handle.net/10138/19522. [Accessed 6.8. 2019].

built utilizing the ruins.[3] During the 2008 season, the neighboring, completely ruined fort of Kioteza was also excavated. Agios Donatos and Kioteza formed the basis of my first two papers published in a peer-reviewed series, and after some encouragement I decided to use the articles as part of a dissertation based on published papers, which is the present volume. This consists of a total of five papers examining the various archaeological and architectural aspects of numerous Epirote fortifications, the current preface, and three appendices.

Chapter 1 of the Preface consists of the introduction, a geographic overview, and short overviews of the historical background and research history, both of Epirus and Greek fortifications in general, and presents the research questions. Chapter 2 concentrates on the methodology, masonry typologies, and the much–debated method of dating the walls through such frameworks. This is relevant as this work has been 10 years in the making, even more if my M.A. thesis is considered, and during this time, many things have changed. I started my PhD studies in 2009, and ever since I have struggled to secure funding. That, together with the excruciatingly slow pace of publishing the volumes containing the papers, has stretched out the process of completing this dissertation to a full decade. As the constituent papers were written years ago, over a long period of time, some challenges have surfaced, especially concerning the change in the dating methods of the fortifications. In many of the papers written some eight to ten years ago my methodology utilized nowadays more–or–less abandoned masonry typologies and their relative chronologies, as presented in subchapter 2.1. The other means of dating a fortification are presented in subchapter 2.2, while the last subchapter 2.3 is the conclusion of this chapter considering the different dating methods.

Chapter 3 and its subchapters present the types of Epirote fortifications and the central concepts of fortifications and their constituent parts. The information about the sites discussed in this chapter was obtained from the research literature upon compiling the site list, Appendix II. The first subchapter, 3.1, introduces the different types of fortified sites, after which the following subchapters, 3.2–3.5, introduce the main concepts of fortifications, their constituent parts, their masonry types, and different smaller details found in the fortifications, along with the dating evidence for such.

Chapter 4 is a summary of Papers I–V, concentrating on the 13 sites discussed in the papers. First an overview of the papers, accompanied by a map showing the locations of the sites, is provided. This is followed by the overview of the process of fortification in Classical–Hellenistic Epirus, as seen in the Papers. The summary is chronologically divided into three subchapters (4.1–4.3). Corrections of erroneous claims and other errata from these papers, along with more up-to-date information on the sites, are also discussed in this

[3] For information on the villa, see E-M. Viitanen 2019, "The Roman Villa and Late Medieval Burial Ground of Agios Donatos", in B. Forsén (ed.), *Thesprotia Expedition IV. Region Transformed by Empire*. (PMFIA XXIV), Helsinki 2019, 243–274.

section. Finally, Chapter 5 presents the conclusions, where all is drawn together.

The five papers written from 2008 to 2016 form the backbone of this work, exploring different aspects of Classical–Hellenistic fortifications in Epirus. Paper I analyzed the remains of the fortifications of Agios Donatos, based on the knowledge and data gained from the 2005–2007 excavation seasons. Paper II returned to the subject and introduced new features of the fort based on the work of the 2008 season, which revealed new information on the tower and the two jogs in the southeastern corner of the enceinte. The paper also analyzed the scanty remains of the neighboring fort of Kioteza which was also excavated during the same season. Paper III concentrated on the massive and well-preserved fortification walls of Elea, the main ancient settlement of the Kokytos valley. This was the first study in which I collected the data merely by studying and photographing the walls, and I used a total station to measure the wall trace for the first time. Unfortunately, the planned time on site during the season of 2010 was reduced from several weeks to just a few evenings, so the planned article was changed from providing a thorough overview of the enceinte to analyzing only the main part of the curtains on the eastern flank.

In 2013 I was finally able to secure funding for a full year of research, enabling me to apply for study permits on several circuits all over the Greek side of Epirus to gather the data and information for the last two papers, which are larger syntheses of different features of fortification enceintes. Paper IV studied the gates and posterns of several Epirote fortifications that used either *corbelling or false vaulting*, or more advanced *true arches* that were capable of not only bearing their own weight but also the mass of the breastworks above that protected them. The paper was based on a presentation given at the Greek Architecture workshop in May 2014 at the FIA. Finally, Paper V studied the enfilading structures of the Epirote fortifications (i.e., towers, artillery bastions and indentations or *jogs* in the wall trace), all designed to provide flanking fire in order to keep enemies' rams or siege ladders from closing in on the walls.

While I have personally been able to study, measure, and map about a dozen fortified sites in detail, I have also visited and photographed many sites all over the Greek side of Epirus. In addition to these, there is a large number of sites mentioned in the literature that I was unable to visit, or even find on maps or satellite images. Thus, upon starting to write this Preface, it became obvious that a list of Epirote fortified sites could be useful to fellow researchers in this field.

Hence, Appendix I is an Index of Sites and the aliases that are mentioned in the Preface, the articles, and the Site List (Appendix II), which is the most important part of this study. It lists 154 fortifications within the area that I was able to visit personally or discovered from the literature and/or satellite images and maps, as of the time of writing this in 2019. Since I follow the geographical boundaries of ancient Epirus as defined by N. G. L. Hammond in

his *magnum opus*[4], which alone describes well over 150 fortified sites of different periods with varying accuracy, some sites fall outside of the bounds of present-day Epirus (i.e., Aetoloacarnania and Illyria). However, as they were a part of Epirus at various times, the few such sites I was able to trace, such as Argos Amphilochikon, Byllis and Klos, do have their own entries on the list.

Appendix III reconsiders the fortifications of Agios Donatos, more specifically the reconstruction drawing of the tower. It has been some thirteen years since I found what I considered a good parallel to the utterly destroyed tower of Agios Donatos. Back in the summer of 2006, Jean Pierre Adam's reconstruction drawing of Tower 5 of Kydna, Lycia seemed a good way of illustrating what the tower could have looked like. Since then, the tower has been more thoroughly excavated, revealing that the ground floor definitely had no loop holes. After learning the use of Trimble SketchUp, I learnt an easy way of illustrating the structural masses of different fortifications and obtaining the correct perspective in reconstruction drawings. Thus, Appendix III concentrates on reconsidering the reconstruction of the tower and its surroundings. Symbolically, this also closes the circle begun in the summer of 2005, when I first glanced at the utterly devastated heap of stones lying in front of me at the eastern tip of Agios Donatos.

The timeframe of the study concentrates on the late Classical and early Hellenistic periods, loosely set to encompass the 4th, 3rd, and 2nd centuries BC. This is because the first roots of urbanization in Epirus, then populated by nomadic tribes are traceable to the first half or mid-4th century BC with only very few exceptions being earlier. While ancient historians and geographers referred to early settlements founded by the Eleans and Corinthians, they need not have been fortified from the start. The fortification of sedentary local settlements started in a few sites during the first half of the 4th century, becoming more frequent over the following decades. Forming the opposite end of the timeframe is the mid-2nd century BC. The Roman conquest following the Macedonian defeat at Pydna in 168 BC, ultimately leading to the (at least partial) destruction of Epirus in 167 BC and the foundation of the Roman province of Achaia in Greece and the destruction of Corinth in 146 BC, are the events that define this endpoint. Given the fortification buildings in the area, the Roman dominance soon, if not immediately, brought about (almost a) total cessation of building fortifications with dry stone masonry.

[4] N. G. L. Hammond 1967: Epirus. The Geography, the Ancient Remains, the History and the Topography of Epirus and Adjacent Areas, Oxford 1967.

1.1 RESEARCH QUESTIONS

The research questions of the five constituent Papers I–V of this work were essentially similar; the central unifying issue was the question of dating the different fortifications through observed features.

In Paper I, the research question was simple; when were the previously archaeologically unexplored fortification walls of Agios Donatos built? Paper II continued on the subject of Agios Donatos by presenting newer research that had not been in the scope of the first paper. The questions involved two areas of the fortifications, the tower and the right-angle turn or jog of the curtain located to the southwest of the tower. How was the tower built and how was it founded? At what height would the floor level of the chamber have been situated? Would the newer research reveal new information to help clarify the dating presented in the first paper? Why is the right-angle corner in the southeast corner of the fort built the way it is, with its wall only half the thickness observable in the adjacent sectors? What might the structure have been, and could it have been the "second orthogonal tower" mentioned by Dakaris?[5] Could it affect the question of dating? Furthermore, the paper also studied the utterly destroyed neighboring fort of Kioteza and asked questions about how it was built, what the ground plan of the fort would have looked like, when it was built, and why, since the much larger fort of Agios Donatos was less than 1 km in distance?

Paper III studied the massive fortification walls of Elea which raised several questions: Why are there clearly two distinctive masonry types visible in the walls? Why were the curtain walls built with the lower part measuring some 4.6 m in thickness, but with the upper part being some 3.1 m thick? Why is the change between the two extremely uneven and undulating? Do the changes of masonry types and the wall thickness have chronological differences, and are they indicative of different phases of construction? If so, how are the phases dated?

Paper IV examined the gates and posterns of Epirus covered by either false vaults, corbels, or true vaulting arches. Some of the questions considered included: What kind of corbels and true arches were used in Epirote fortifications and at which sites can they be found? Why use corbelling, as the structure is not self-supporting? How are the corbels and true arches in Epirus dated? Is it possible to show some sort of development in construction, from corbels to true arches? Where was vaulting invented, in Asia Minor, Macedon or Epirus and when?

Finally, Paper V concentrated on the defensive aspects of circuits, on the structures enabling flanking fire, or *enfilading*. What kind of enfilading devices were utilized in the eight studied sites? Could the development of these devices be discerned? What kind of defensive weaponry could be utilized in

[5] Dakaris 1972, 138.

the examined fortifications? Could the enfilading devices or the possible weaponry used help in dating different fortifications?

Chapter 3 and its subchapters examine the different types of fortifications found in Epirus, the basic concepts of fortifications and their component parts and the dating evidence provided by the research literature. The sites discussed are those that I was not able to study personally but encountered in the research literature upon compiling Appendix II. The main questions in the chapter concern the types of fortifications and the different architectural and structural elements and details of the fortifications: What kind of fortified sites are there in Epirus, and how many of each? Are the architectural and defensive features found in Epirote fortifications indicative in dating the sites? Are there some important, rare or unique structural features discernible? Can the different features help with establishing a date for an Epirote fortification?

1.2 BOUNDARIES AND GEOGRAPHICAL FEATURES

The geographical boundaries of the study follow the limits defined by N. G. L. Hammond (1967), according to whom "Epirus Proper" falls within limits drawn from Cape Linguetta eastward to Mount Qelqes, from there towards the south–southeast to Mount Gavrovo, and from there westwards to the mouth of the Ambrakian Gulf.[6] In the east, the Pindus and Grammos mountain ranges form a natural boundary separating Epirus from Thessaly in the east and Macedonia in the northeast (Fig.1).[7]

The Greek side of Epirus consists of four regional units, former *nomoi,* of Thesprotia, Preveza, Arta and Ioannina. On the Albanian side, the studied sites are spread across the three counties of Gjirokastra, Vlorë and Fier, with all but two sites, Byllis and Klos, within the limits of the first two counties.

[6] Hammond 1967, 7. The names of places have changed since his visits in the 1930s, and proved surprisingly difficult to find. Fortunately, Roisman and Worthington 2010, 280 offer some clarification as to the names. Cape Linguetta equates to the Acroceraunian Promontory or Karaburun Peninsula, located on the opposite side of the bay near the town of Vlorë. Mount Qelqes is Mali I Qelqezes, located some 35 km southwest of Korçe in Albania, while Mount Gavrovo lies in Greece some 26 km east–northeast of Arta.

[7] Sakellariou 1997, 12.

Figure 1 Study area, Epirus Proper as defined by N.G.L. Hammond, indicated by red lines. Map data ©2019 Google.

Epirus is mountainous throughout, hence it has been called "the Switzerland of Greece".[8] Five massive mountain ranges running parallel to each other from the north–northwest to south–southeast force the rivers to wind between them. Starting from the southeast, the major rivers on the Greek side are the Arachthos, Louros, Acheron, and Kalamas. Smaller rivers include the Kokytos, draining into the Acheron, while the Voidhomatis and Sarandaporos drain into the Aoös. On the Albanian side, the major river is the Aoös, known locally as Vjosë. The river's spring is on the Greek side, and it flows northwestward to Albania, and finally drains into the Gulf of Vlorë, north

[8] ibid.

of the town of the same name. Smaller Albanian rivers within the study area iclude the Drino and Shushicë, both of which are tributaries of the Aoös. In addition, there are two rivers, the Pavla in the south and the Bistrica in the northeast that discharge into Lake Vivari around Butrint (Fig. 2).

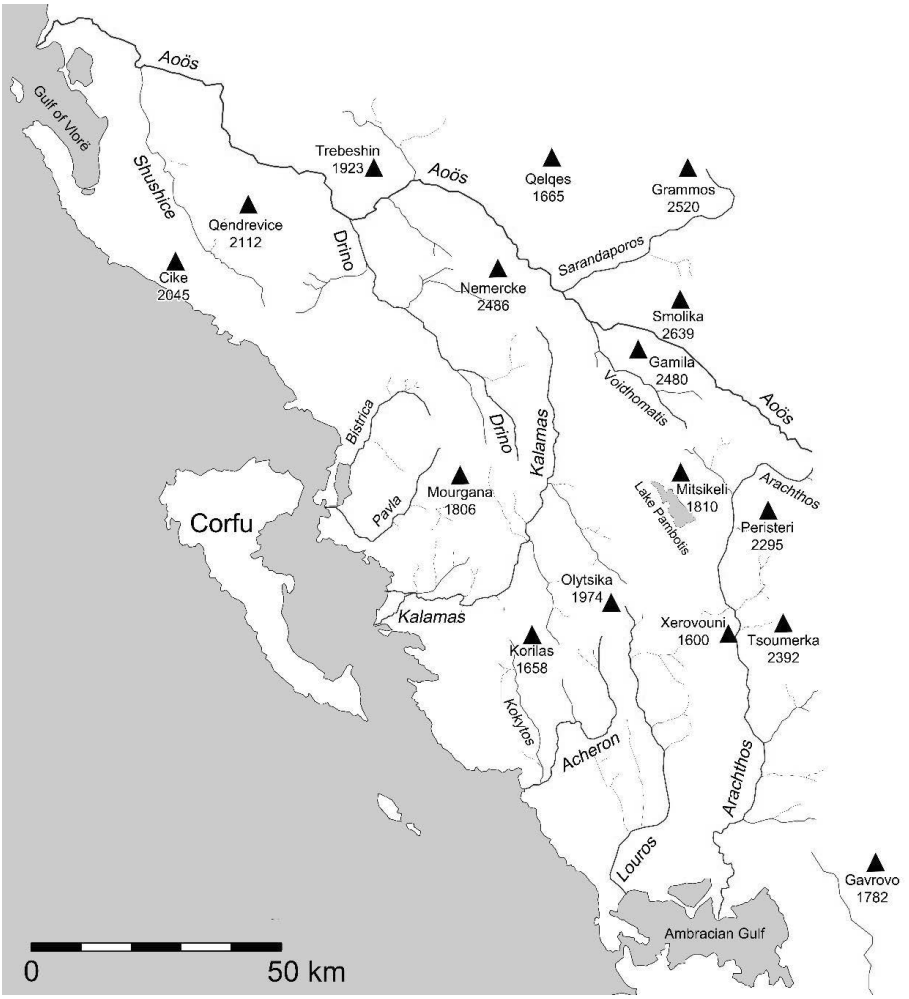

Figure 2 The rivers in Epirus written in italics. Some of the most important mountain peaks and their altitudes are also indicated. Map by M. Suha 2019 after Hammond 1967, fig. 1.

Amongst the mountains there are plateaus where large-scale cultivation has been possible, the most important being the large plateau of Ioannina including Lake Pambotis, although in antiquity the lake might not have existed. A much smaller, but historically important, neighboring plateau must be mentioned, as it was the site of the Oracle of Dodona. In the southwest of the area is the fertile basin of the Acheron and Kokytos Rivers, known in

antiquity as "Olive-land", Elaiatis. In the northeast, near the modern town of Konitsa, there is a plain bound by the mountains and the Rivers Saradaporos and Voidhomatis. Some 35 km westward is the valley of the River Drino which forms a long but narrow plain running from the south–southeast to north–northwest. Coastal plains are found on the Albanian side of the border around the Gulf of Vlorë. Another important area with coastal plains surrounds Lake Vivari near Butrint. To the south of this, on the Greek side the Kalamas Delta and especially the coastal plains north of the Ambracian Gulf are extensive, having been greatly increased in size thanks to the silting action of the rivers.[9] Some two millennia ago, these river floodplains would have been considerably smaller.

Travel has been possible along the waterways and along the floors of the valleys. Along the valleys, there are some easily defendable narrows and defiles restricting movement of armies. In the south, the Arachthos flows through very rocky gorges in the mountainous area located to the southeast of the Ioannina Plateau. The Louros River flows through a ten-kilometer gorge between Nea Mousiotitsa and Klisoura. Up-river, the Acheron also winds through nearly impassable canyons before reaching the coastal plain near Glyki, while the Kalamas flows in a steep-sided gorge between Polydroso and Pente Ekklesies. Pavla also traverses a rocky landscape, with especially precipitous gorges near Tsamanda on the Greek side, and again near Karroq on the Albanian. Just south of its confluence with Vjosë/Aoös, the Drino traverses a narrow gorge near Lekël. Finally, below Mt. Trebeshin to the east of Këlcyrë, the Vjosë/Aoös flows through the 13 km long Kelcyrë Gorge, or Aoi Stena in ancient nomenclature. Downriver, the river then traverses a much smaller gorge, Ylynec near Kalivaç, some 20 km northwest of Tepelene.

Historically, the different Epirote areas were named after the three major tribal groups of the Thesprotoi, Molossoi, and Chaones, in addition to which one lesser tribe, the Kassopaians, is mentioned (Fig. 3). The three most important area names used frequently in literature and also in this study are: (1) *Thesprotia*, inhabited by the Thesprotoi occupying the coastal area between the Acheron and the Pavla, stretching from the coast eastward and covering some 2000 km² in area; (2) Neighboring Thesprotia in the east, in the interior, is *Molossia,* inhabited by the Molossoi or Molossians, and stretching from the eastern part of the Ambracian Gulf northward, dominating the interior and covering some 10000 km²; in the northeast and east, Molossia is bound by the upper reaches of the Aoös and the Pindus range; and (3) *Chaonia,* occupied by the Chaones or Chaonians, is the northern neighbor of Thesprotia, covering some 3000 km² and stretching from the Pavla northward to the Gulf of Vlorë, with the eastern border running along the Drino and the Vjosë/Aoös. A lesser tribal area, the ca. 1000 km² *Kassopaia* of the Kassopaioi/ Cassopaei, is located in the southwestern corner, bound by the

[9] Sakellariou 1997, 19-22.

Ambracian Gulf in the south, Thesprotia in the north and Molossia in the east. [10]

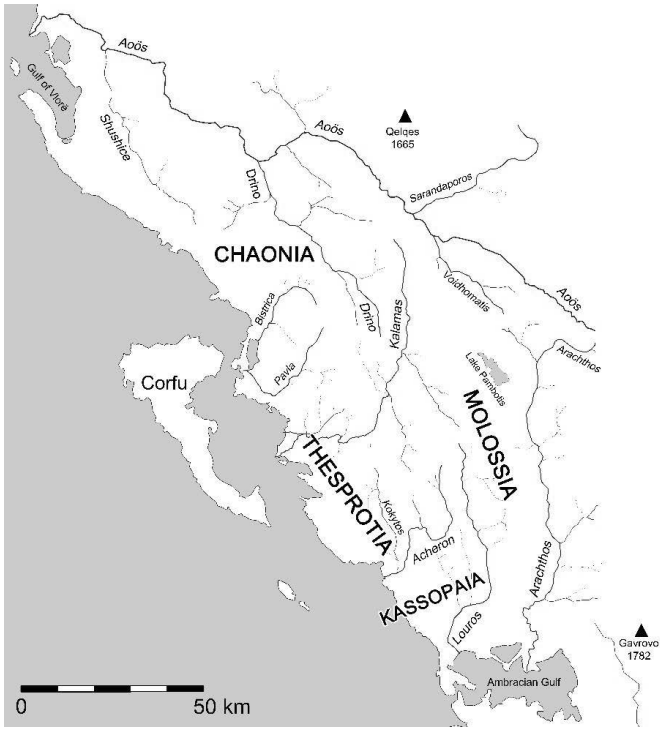

Figure 3 Major tribal areas in the study area. Map by M. Suha 2019 after Hammond 1967, fig. 1.

1.3 HISTORICAL BACKGROUND: A SHORT OVERVIEW

Toward the end of the 8th century BC, the first Greek colonies were founded in the southern parts of Epirus. Settlers from Elis founded three colonies, Bouchetion, Elatria and Batiai, on the northern shores of the Ambracian Gulf and a fourth, Pandosia, slightly more to the north in the Acheron Valley.[11] Roughly around 625 BC, the Corinthians founded the city of Ambrakia in the

[10] The areas of Thesprotia and Molossia after Dausse 2011b, 231, n. 2; Dausse 2017, 144; The areas of Chaonia and Kassopaia are not stated directly, but Dausse 2011b, 231, n. 2 mentions Chaonia as being one-third the size of Molossia, and Kassopaia as being one-tenth the size.

[11] Strab. 7.7.5; Dakaris 1971, 164–165; Note that Hammond 1967, 427 identified Pandosia with Trikastron, but this has since been replaced with Dakaris' identification of Pandosia being Kastri Acheronta in the Acheron Valley. Appendix II lists Bouchetion/Kastro Rogon as number 12, Paliorophoron/Elatria 13, Kastri Rizovouni/Batiai as 21 and Kastri Acheronta/Pandosia as 20. Trikastron is number 23.

interior, at a bend of the Arachthos. Other early settlement foundings include Argos Amphilochikon in the south and Orikos and Bylliake in the north, mentioned by Hekataios as Greek poleis in the end of the 6th century BC.[12]

On Corfu, the Corinthians founded the colony of Corcyra on the Palaiopolis Peninsula around 733 BC. Corcyra evidently managed to achieve independence in quick order, as already by 664 BC they had fought a naval battle against the Corinthians. The growth in maritime trade also affected the mainland, as the shipping required ports of call and safe havens from bad weather on the coastal areas of Epirus. According to Thukydides at the latest by 427 BC the Corcyraeans had built fortifications on the mainland, into which the lost party of a domestic dispute first fled before returning to the island at a later stage.[13] This Corfiot land beyond the sea, the "Corcyrean Peraia", was identified by Hammond as the area around Bouthroton and Phoinike.[14] Excavations in Butrint have yielded Corinthian and Proto-Corinthian pottery, and Hammond argued that the Dema Wall across the Ksamili isthmus could have been built by the Corcyraeans during the 5th century BC to defend the area from the north.[15] However, Dakaris later argued that the Corcyraean Peraia should rather be identified with the Kalamas Delta where there are several fortified sites located on the hills, which were formerly islands.[16]

In Epirus, transhumant pastoralism was the main way of life for the local tribes who coalesced into the large groups of the Thesprotoi, Molossoi and Chaones. The small constituent tribes could abandon one group and join the other; tribal group "memberships" were not constant. The Thesprotoi had their winter pastures in the area between the Ambracian Gulf and the Delta of Kalamas, while the winter pastures of the Chaonians were located to the north, stretching from Konispol to the Gulf of Vlorë. To reach the summer pastures far inland both had to traverse to the area of the Molossoi, who controlled the finest summer pastures on the northern Pindus. To that end, they had to make reciprocal agreements, allowing the Molossoi to use some of their winter pastures in return.[17]

By the 5th century BC, Ambrakia had turned into the most important trade hub in Epirus, and the people in the south had friendly ties with Corinth. In

[12] Strab. 10.2; Sakellariou 1997, 48; Hammond 1967, 419. In Appendix II, Ambrakia is number 10, Argos Amphilochikon 2 and Orikos/Oricum 150. Bylliake, the harbor of the Bylliones is identified with the site known as Plaka located to the east of Zvërnec, some 8 km northwest of Vlorë.

[13] Thuc. 3.73–3.85.

[14] Hammond 1967, 499, 552. Appendix II lists Bouthroton under entry 94 and Phoenice under number 117.

[15] Hammond 1967, 414–428; Sakellariou 1997, 56. The Dema Wall is listed as number 111 in Appendix II.

[16] Dakaris 1972, 34–35; Sakellariou 1997, 100. There are indeed several fortified sites on the hills at Kalamas delta, listed in Appendix II: Pyrgos Ragiou, number 65, Lygia/Lygaria A-C 66 and Mastilitsa/Masklinitsa number 67.

[17] Sakellariou 1997, 54.

order to oppose the Corcyraean encroachment on the territory near their important center of Phoinike, the Chaonians also befriended the Corinthians.[18] Epirus was mostly unaffected by the Peloponnesian War, although Corcyra and Acarnania were allied with the Delian League, while the Ambrakians and Chaonians sought help from the Spartan side. According to Thukydides the Ambrakians, aided by their Peloponnesian allies, attacked Argos Amphilocikon in 430 and again in 426 BC. During the first action, the Ambrakians gained control of the countryside but failed to take the city itself, which must have already been walled by then.[19]

The geographers of the late 4th century, Pseudo-Skylax and Pseudo-Skymnos, described the situation of the tribes around 380–360 BC, during which time the Chaones, Thesprotoi, and the Molossians still lived in unfortified villages. The Molossians had coastal access, a 40-stade stretch of shore of the Ambracian Gulf southwest of Ambrakia. The city itself was regarded as Greek, located in the interior "after Molottians" (i.e., considered being outside the tribal territory of the Molossians).[20] Ambrakia is thought to have been fortified during the late 6th or early 5th century BC.[21]

Slightly later, in 360–355 BC things still continued in the old way in Epirus, with the local tribes living in unfortified villages, interspersed with some Greek *poleis* -Pandosia, Ambrakia, and Argos Amphilochikon –independent of tribal systems. The Kassopaians were now mentioned separately, indicating that they were independent from the Thesprotians. While they probably occupied the site of the future city, it might not have been fortified at this stage.[22]

The Illyrians in the north were problematic neighbors, having made several incursions into Epirote and Macedonian lands by the early 4th century BC, which led to both the Macedonians and the Epirotes to organize themselves better for defense. When the Illyrians again invaded Molossia and Macedonia in 360 BC, the two entered into an alliance. Led by Philip II of Macedon, they were able to beat the Illyrians the following year. Molossia was thus safe from harm for a time, and the alliance was cemented when Olympias, the niece of the King of Molossia, marryied Philip II in 357 BC. Despite the marriage, in 350 BC the Macedonians waged war and defeated King Arrybas of Molossia, then expelled him and took his son Alexander to the Macedonian court. In 343/342 BC, Philip II returned and conquered the four Elean colonies. Pandosia became a Kassopaian settlement while the other three were handed over to the Molossians. Philip then placed Alexander I on the Molossian throne with the aim of helping the Epirote tribes gain independence from the Greek cities. This seems to have succeeded as at this time both the Kassopaioi and the Eleans living in the Kokytos Valley began minting their own currency.

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[18] Thuc. 1.47, 2.80; Hammond 1967, 490.

[19] Thuc. 2.68, 3.105-113; Hammond 500-502; Ley 2009a, 60–61.

[20] Ps.-Skylax, 28–32, 33.1; Hammond 1967, 511–523.

[21] Frederiksen 2011, 128–129.

[22] Hammond 1967, 518. Kassope is number 14 in Appendix II.

After a few years, in 334 BC King Alexander I went on campaign in Italy at the request of Tarentum. After suffering a disastrous defeat three years later, he was killed there, when his son Neoptolemos II was only three years old. During the King's absence, Queen Cleopatra, the daughter of Philip II and Olympias, had acted as regent of Molossia jointly with Olympias. To counterbalance the joint power of wily Olympias and the Molossians, at some stage between the late 330s and 325 BC the Macedonian regent Antipater helped create the *Epirote Alliance,* designed to restrict the power of the Molossian kings. The alliance consisted of the Molossians, Thesprotians, and Kassopaians, all of whom could conduct their own affairs on equal terms. While the members of the Alliance would join together under one leader or *hegemon,* the King of Molossia in war, they could also depose and exile the king if needed. The founding of the Epirote Alliance co-incides with the cessation of the Elean and Kassopaian coinages. Hammond argued that Alexander's Italian campaign could have boosted the urbanization and fortification process greatly, as the ideas absorbed by the troops returning home after 331 BC would no doubt have affected the local building tradition.[23]

After the death of Alexander the Great in 323 BC, Olympias returned to Macedonia and became involved in the struggle for the throne. To rule Molossia jointly with King Neoptolemos II, who was still a child, in her absence, she recalled the exiled King Arybbas. The old king soon died and was succeeded by his son, Aiakides. In 317 BC, Aiakides tried to help Olympias, who at the time was being besieged in Pella by Kassandros. However, the Epirote forces were reluctant to wage war against the Macedonians, and banished Aiakides by an alliance decree, after which they entered into an alliance with Kassandros.[24]

Neoptolemos II was now the sole king, but was still too young to act as a military commander. Thus, Kassandros appointed Lykiskos, a Macedonian general, to take charge of military affairs.[25] In 313 BC, Aiakides returned and deposed Neoptolemos, but was soon killed. The Molossians then recalled another previously deposed king, Alketas, who was immediately attacked and defeated by Lykiskos near Kassope. He then fled to Eurymenai,[26] where he was at first relieved by a force led by one of his sons, but was ultimately defeated by another Macedonian force, after which the city was plundered. Kassandros eventually made peace with Alketas.[27] In 307 BC, Alketas' harsh treatment of the people led to him and his sons being put to death by the Epirotes.

An Illyrian king, Glaukias, who already in 317 BC had offered protection to Aiakides' baby son Pyrrhos, then stepped in. He installed Pyrrhos, a boy of

[23] Hammond 1967, 557.

[24] Sakellariou 1997, 60–62; Hammond 1967, 533–542, 558–563.

[25] Diod. 19.36.1-5.

[26] Eurymenai, most likely Kastritsa, number 77 in Appendix II.

[27] Diod. 19.74, 88–89; Hammond 1967, 567–568.

twelve, on the Molossian throne to jointly rule with Neoptolemos II. Young Pyrrhos' advisers sided with Kassandros' adversary Demetrios Poliorketes, marrying Pyrrhos' sister Deidameia to him. That led to Kassandros attacking Molossia in 302 BC and deposing Pyrrhos, who eventually fled to the court of the Ptolemies in Egypt. Thus, Neoptolemos II again acted as the sole ruler for some years, until Pyrrhos returned in 297 BC. Backed by the wealth of the Ptolemies, Pyrrhos forced the king to share the throne, which he secured for himself a couple of years later by having his rival assassinated.[28]

Pyrrhos then became involved with disputes over the Macedonian throne. He was successful in his endeavors, securing the possession of Amphilochia[29] and Ambrakia, which he turned into his capital.[30] He also managed to annex Acarnania, added Leucas and Corcyra to his possessions and within the first ten years of his reign, he also managed to capture southern Illyria.[31] At this time the Chaonians also joined in the Epirote Alliance. The resultant "Greater Epirus" of Pyrrhos had an area of some 20,000 km², stretching from the Gulf of Corinth in the south to central Albania in the north, with half a million inhabitants.[32] During Pyrrhos' reign, Epirote cavalry and infantry were trained on the Macedonian model. Building activity increased dramatically, and as Pyrrhos was first and foremost a soldier, fortifications must have been prioritized in the building program.[33]

In 280 BC, Pyrrhos crossed over to Italy at the request of the Tarentines, fought the Romans on a number of occasions and ruled in Sicily for a time.[34] However, in late 274 BC, he returned to Greece, bringing with him a great number of Epirote veterans, 8000 foot soldiers and 500 cavalry.[35] He then continued fighting in Greece, until he was killed while attacking Argos in 272 BC. His infant son Pyrrhos II was adopted by Alexander II, an older son of Pyrrhos, who now ascended the throne. At this time Epirus was at the height of its power and Alexander II was able to defeat the invading Illyrians on the northern border. During the Chremonidean War (266–262 BC), Alexander II even briefly invaded Macedonia, but was ultimately defeated and driven out of both Macedonia and Epirus, taking refuge in Acarnania. He managed to regain the Molossian throne in 259 BC.[36]

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[28] Plu. Pyrrh. I–IV; Hammond 1967, 560–568.

[29] Amphilochia is the modern settlement on the southeastern tip of the Ambracian Gulf, above which is the ancient Limnaia/Karavassaras with its Long Walls descending to the seaside. For a description, see Ley 2009a, 79–84.

[30] Strab. 7.7.6.

[31] Plu. Pyrrh. VI–IX.

[32] Sakellariou 1997, 74–75.

[33] Hammond 1967, 586–587.

[34] Plu. Pyrrh. XIII–XXV.

[35] Plu. Pyrrh. XXVI.2.

[36] Sakellariou 1997, 79–80.

He then entered into an alliance with the Aetolian League, after which both turned on the Acarnanian League, whose lands were thenpartitioned between the two.[37] By this stage the hub of Epirote trade had moved from Ambrakia to Phoinike in the northwest.[38] At this time Rome was fighting the First Punic War (264–241 BC), offering great trade opportunities for Epirus as the sea lanes between Rome and Epirus were safe from the Carthaginian fleets and Italy was in dire need of trade goods. Thus, upon King Alexander II's death at some point between 252–240 BC,[39] Epirus was still powerful and wealthy. According to Hammond, the population of Epirus reached its peak between the 240s and 167 BC.[40]

However, trouble was brewing all around. In the north the Dardanians attacked Macedonia. At the same time, the other Illyrian tribes in the north united under King Agron and captured the northernmost Epirote holdings in central Albania, although fortified cities such as Apollonia[41] still stayed in Greek hands. The lucrative international trade of the previous decades stalled during the 230s BC, as after winning the First Punic War, Rome had less need of trade from Epirus and the ever-growing threat of Illyrian piracy caused further disturbances to sea trade. In the south, the Aetolian and Achaean Leagues formed a pact, attacking the Epirote holdings in Acarnania.

The widow of Alexander II acted as a regent for their two underage sons, Pyrrhos II and Ptolemy. Epirus allied with Macedon out of fear of the Aetolians who were keen on capturing the Epirote-held parts of Acarnania, and in order to achieve their goal, made incursions into both. Eventually, both boys came of age, but then soon died in quick succession, as did their mother. Deidameia, the daughter of Pyrrhos II, then took over in 232 BC. Ambrakia soon revolted. Although Deidameia managed to recapture the city, the citizens soon dispatched her, and opened up Pyrrhos' tomb and scattered his ashes. The Molossian monarchy was abolished and replaced by the republican Epirote League or the *Koinon of the Epirotes*. [42]

In 232/231 BC the Aetolians were besieging Medeon in Epirote–held Acarnania.[43] The siege was relieved by a naval contingent of Illyrians that Demetrius of Macedon had bribed to help. In the next year, another Illyrian fleet successfully plundered the coasts of Elis and Messenia, after which they put to land near Bouthroton and Phoinike. They then managed to catch the Epirotes unaware and capture Phoinike, the wealthiest Epirote city at the time.

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[37] Plb. 9. 34. 7.

[38] Phoinike, number 117 in Appendix II.

[39] In 240 BC according to Hammond 1967, 590; at some point between 252–247 BC according to Sakellariou 1997, 80.

[40] Hammond 1967, 668

[41] Apollonia is outside of the study area, located some 9 km east from the present coastline and 28 km north of Vlorë on the north side of Aoös.

[42] Hammond 1967, 588–592; Sakellariou 1997, 80.

[43] Medeon or Medion near Katouna. See Ley 2009a, 85–87.

When an Epirote army was marching to besiege Phoinike, they heard that another Illyrian force was headed the same way from the north. The Epirotes split their forces so that one part went on besieging Phoinike, while the other marched northwards to block a pass near Antigonea.[44] The weakened besieging force surrounding Phoinike was defeated by an Illyrian sally, which forced the Epirotes to seek help from their enemies, the Aetolians and the Achaeans. With the Aetolian aid arriving within few weeks, the Epirotes were able to secure a truce with the Illyrians, who not only carried away plunder from Phoinike but also received a hefty ransom for returning Phoinike. The Drino valley was also plundered by the second Illyrian force.[45]

The Epirotes then switched sides again, this time allying themselves with the Illyrians and the Macedonians against the Aetolian and Achaean Leagues.[46] Despite now being allied with them, the rampant piracy by the Illyrians raised havoc amongst the already dwindled Epirote sea trade, and the pirates even attacked Roman traders at sea. By 229 BC the Illyrians were besieging Epidamnos[47] and Corcyra, who, together with Apollonia, pleaded for help from the Aetolian and Achaean Leagues. However, their relieving forces were defeated after which Corcyra surrendered to the Illyrian pirates. The Romans then took action, sailed to and soon liberated Corcyra, then relieved Apollonia and continued inland.[48] The remaining Greek cities to the north of Epirus Proper now accepted Roman protection, which was more trustworthy than that of the weakened Epirote League.[49]

By the 220s BC, the Epirote situation was grim. The Aetolian pirates were plundering the seas and the coasts, the cities of Ambrakia and Amphilochia abandoned the Epirote cause and instead joined the Aetolian League, and even the Kassopaians broke away. In 224/223 BC Macedonia formed the *Hellenic League* encompassing the Epirote, Acarnanian Thessalian, Boeotian and Achaean Leagues. The Epirotes also joined, as its membership seemed to offer protection against the Aetolians.

Under Philip V of Macedon, the Hellenic League then went to war against the Aetolians resulting in the *Social War* (220–217 BC). The Epirotes persuaded Philip to first attack Ambrakos, the fortified harbor of Ambrakia located on the floodplains of Arachthos some 13 km south–southwest of the city.[50] They were hoping that Ambrakia would thus be forced to abandon its alliance with Aetolia. Ambrakos was besieged and taken in forty days, after which Philip V turned to Acarnania, where his campaigning was successful.

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[44] Antigonea is identified with the site near Saraginisht, listed in Appendix II under number 137. The pass is thought to be the pass of the Drino below Lekël, number 144.

[45] Plb. II.2.1.–6.8.

[46] Plb. II.6.9.

[47] Epidamnus = Dyrrhacium = Durres on the coast of Albania, ca. 30 km west of Tirana.

[48] Plb. II.8.1.–11.10.

[49] Hammond 1967, 595–598.

[50] Phidokastro/Ambrakos, number 6 in Appendix II.

However, by this time the Dardanians in the north started threatening Macedonia, which caused Philip to return home.[51]

In the autumn of 219 BC, the Aetolians invaded the plain of Ioannina from the east and sacked the temple of Zeus Areios at Passaron[52] as well as the sanctuary of Dodona. Philip V retaliated against this raid in the next year by campaigning successfully in the Peloponnese, raiding Limnaia and even Thermum, the most important Aetolian sanctuary. In 217 BC the Aetolians attacked Epirus for the second time and ravaged the entirety of Epirus, while the Epirotes could offer no resistance, the only exception being the unsuccessful Aetolian siege of Phanote.[53] After the latter attack all sides were ready to sue for peace, resulting in Ambrakos staying in Epirote hands while Ambrakia remained Aetolian.

In 215 BC, the Hellenic League allied with Hannibal, who appeared to be winning in Italy. In August of 214 BC Philip V started an attack in Illyria with the aim of conquering Roman-held Apollonia. When that proved unsuccessful, he switched his objective to Oricum[54] on the Gulf of Vlorë. To that end, the troops of the Hellenic League would have had to march through Epirus and sail along the Aoös. Unfortified Oricum was captured, but was soon recaptured by the Romans, who also managed to break the siege of Apollonia.

The war went on, and in 211 BC, the Romans entered into an alliance with the Aetolians. Philip V managed to capture Ambrakia in 207 BC but soon lost it again, along with Ambrakos to the Aetolians who were now assisted by the Romans. Having grown tired of war, which they had been waging since 228 BC, the Epirotes then acted as intermediators between the Hellenic League and the Romans, ending the First Macedonian War in 205 BC with a peace treaty at Phoinike.[55]

The Epirotes took no part in the Second Macedonian War of 200–197 BC. Even though both the Romans and the Macedonians maneuvered in and through the Epirote territory, Epirus managed to stay unharmed. A few years later, the Epirote League allied itself with Rome.[56]

The war between Rome and the Aetolians ultimately resumed. A Roman army landed at Apollonia and marched through the entirety of Epirus to besiege Ambrakia during the early summer of 189 BC. Epirote contingents joined in to assist the Romans who built siege works along the south side of

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[51] Plb. IV.61.1.–66.4.

[52] The unfortified temple was located outside the city walls on the valley floor. It was excavated in Rodotopi, some 3.6 km northwest of Megalo Gardiki/Passaron, 80 in Appendix II. Note, however, that Georgia Pliakou argues for an alternative location of both according to which Passaron and the temple of Zeus Areios within its walls would have been located in the site of the Kastro of Ioannina, number 79.

[53] Plb. IV.67.1.–V.96. Phanote = Doliani, number 62 in Appendix II.

[54] Oricum/Orikos/Ericho, number 150 in Appendix II.

[55] Hammond 1967, 597–612.

[56] Hammond 1967, 614–621.

the city to cut the flow of supplies. After the circumvallation was complete, they attacked the city walls from five locations simultaneously using rams and undermining, however, the assaults were repulsed. In autumn, the city surrendered and lost some of its wealth to the Romans but avoided a complete sack. Ambrakia was then given autonomous free city status but was not allowed to rebuild its fortifications.[57]

At the time the Third Macedonian War started in 172 BC, the Epirotes stood on the Roman side and Ambrakia acted as a base for a Roman army stationed there. The initial stages of the war went badly for the Romans, which caused the pro-Macedonian party in Molossia to rise in popularity so that by the winter of 170/169 BC, the Epirote League had dissolved. The Molossians and the majority of the Thesprotians sided with the Macedonians, while some Thesprotians and all of the Chaonians supported the Romans. The Macedonians installed a garrison in Phanote in the Kalamas Valley, which was soon besieged by the Romans, together with their 6000 Thesprotian and Chaonian allies, but the city was defended successfully by Cleuas.[58]

In 168 BC Aemilius Paullus was appointed as the new consul. In June, he defeated the Macedonian King Perseus at Pydna, ending the war. Soon thereafter, another Roman army entered Epirus from the north. Phanote surrendered and a Roman garrison was placed within. The army then moved into Molossia, where all cities yielded, except four. Approaching along the Kalamas the Romans first attacked Passaron, the main Molossian center where two pro-Macedonian leaders had taken refuge. Tekmon was the second besieged city. Both held out for a time, but after suicidal sallies of their pro-Macedonian leaders, they yielded. Orraon and Phylake then fell even before they were besieged.[59] The Romans camped for the winter in Passaron.

In 167 BC the Romans took their revenge. They sent troops to the Epirote settlements to collect all of their silver, gold, and other valuables, which the inhabitants were told to collect in their agoras. The troops were sent in such a way as to simultaneously appear everywhere. In the morning they arrived at the settlements and took possession of the tribute. In the fourth hour after sunrise, the troops started pillaging without constraint. Seventy *oppida* were razed and 150,000 Epirotes were taken captive. Central Epirus was "left to the wolves".[60]

The traditional image above, as painted by Polybius and Livy, is applicable to many cities, however, life continued in some way in the countryside. Whereas some population centers like Elea were indeed apparently looted, abandoned entirely and never properly resettled, sites such as Orraon, Gitana,

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[57] Plb XXI.27.1.-30.10; Livy 38.4.1.–9.12; Hammond 1967, 144–146.

[58] Livy 43.21–25. Doliani/Phanote, number 62 in Appendix II.

[59] Plb 30.7; Livy 45.26; Hammond 1967, 577. Passaron being number 80 (or 79), Tekmon being Kastritsa, 77 and Orraon equating to Ammotopos, 22 in Appendix II. In 2009 M.-P. Dausse convincingly argued that Phylake should be identified with Kaloyeritsa/Therakisi, number 49.

[60] Livy 45.34; Hammond 1967, 622-635.

and Passaron evidently had their circuit walls at least partially torn down but remained settled. Some, such as Kassope and Phanote did not seem to have had their walls purposefully torn down.[61] Recent research and new interpretations on the scale of the devastation has challenged the traditional view, arguing that the round numbers, 70 razed settlements and 150000 captured slaves were not exact, but more symbolic figures and that earthquakes, not necessarily man-induced destruction, could be considered responsible for at least some of the collapsed enceintes, such as that at Elea. [62]

The historical overview for the present study ends here, because life in Epirus certainly changed drastically at this point. Some settlements were more-or-less abandoned, while some continued to linger on, although greatly impoverished. Most of the old wall circuits were never repaired and the few Roman-founded settlements that even had walls were fortified in a wholly different way, utilizing mortar. The final abandonment of many southern settlements followed the foundation of Nikopolis, the "victory city" of Augustus, to commemorate his success in the sea battle of Actium in 31 BC. The *synoikism* required for the settlement of the huge new city emptied the old, impoverished settlements throughout a vast area.

1.4 EARLIER RESEARCH

1.4.1 RESEARCH ON EPIRUS

The most formidable and thorough research on ancient Epirus was conducted without any doubt by Nicholas Hammond (1907–2001), who was the Professor of Greek at the University of Bristol and also worked as an operative of the Special Operations Executive during the Second World War in Greece and Albania. He traveled extensively around the area traversing the entire stretch by foot, and being fluent in Greek and Albanian he was able to procure information from the locals. His notes from these travels– starting from 1929 up to the 1950s– produced the massive monograph *Epirus. The Geography, the Ancient Remains, the History and the Topography of Epirus and Adjacent Areas*, published in 1967.[63] In this volume he describes well over 150 enceintes, located all over the area. The number includes a fair number of Byzantine and later sites.

[61] Riginos & Lazari 2007, 78–80; Kanta-Kitsou and Lambrou 2008, 37–39; Kanta-Kitsou 2008, 23–24. In Appendix II Elea is number 47, Orraon 22, Gitana 63, Passaron 80, Kassope 14 and Phanote number 62.

[62] Forsén 2019, 12–17. This was published after the initial version of this Preface was submitted, and thus is only mentioned here in a footnote.

[63] Hammond 1967.

Sotirios Dakaris (1916–1996), the Honorary Professor of Archaeology at the University of Ioannina was another central figure in the research of Epirus. He surveyed and excavated numerous sites in Epirus, among them Dodona and Nekyomanteion[64] and published a number of guide books on different sites. In 1971 and 1972 he published two large volumes on Epirote antiques, *Cassopaia and the Elean Colonies*[65] and *Θεσπρώτια*[66]. In the books he gave an overview of different sites, most importantly the settlements and their fortifications within the area.

Spyros Mouselimis (1897–1984), a local school teacher interested in history wrote guide books on Thesprotian antiquities, covering not only archaeological sites but also some paleontological observations on Thesprotia and the nearby areas.[67] While his descriptions vary in quality from seemingly accurate to just plain absurd, they proved helpful in localizing some troublesome sites by cross-referencing many with Hammond's descriptions.

Pierre Cabanes is a French historian and epigraphist who wrote his 1965 dissertation on the history of Epirus from the death of Pyrrhos to the Roman conquest, published as a monograph in 1976.[68] He has been central to the study of the epigraphy, history, and archaeology of Epirus and Illyria, and has arranged several international conferences on the subject. He has contributed to all of the conference volumes and acted as the sole editor of three volumes.[69] He was also the editor of the Archaeological Atlas of Albania, published in 2008.[70]

Georgia Pliakou, the current Ephor of the Ephorate of Antiquities of Thesprotia wrote her dissertation in 2007 on the sites on the Ioannina Plateau. Her very thorough dissertation has been very helpful in locating some of the sites in the Ioannina Basin. Her descriptions of the sites, especially Megalo Gardiki/Passaron, Kastro of Ioannina, Kastritsa and Episkopiko were of great use to me in writing the Preface and site listings in Appendix II.[71] Her later

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[64] In Appendix II, Dodona is number 56, Nekyomanteion number 21.

[65] Dakaris 1971.

[66] Dakaris 1972.

[67] Mouselimis 2001.

[68] P. Cabanes 1976, L'Épire de la mort de Pyrrhos à la conquête romaine (272-167 av. J.-C.), Paris 1976.

[69] Six conferences titled "L'Illyrie Méridionale et l'Epire dans l'antiquite", the proceedings of which were published in volumes of the same name, henceforth abbreviated as IMEE. Four of the volumes can be found in the bibliography of the current study, in those cases they are only referred to by the name(s) of the editor(s): 1) P. Cabanes (ed.), IMEE I, Actes du colloque international de Clermont-Ferrand (22–25 octobre 1984), Brussels 1990; 2) Cabanes 1993; 3) P. Cabanes (ed.), IMEE III, Actes du IIIe Colloque International de Chantilly (16–19 Octobre 1996), DeBoccard 1999; 4) Cabanes & Lamboley 2004; 5) Lamboley & Castiglioni 2011; 6) Lamboley *et al.* 2018.

[70] Cabanes *et al.* 2008.

71 Pliakou 2007. In Appenix II Megalo Gardiki/Passaron is number 80, Kastro of Ioannina 79, Kastritsa 77 and Episkopiko 55.

research in 2011 continued with her interesting new identification of Passaron with the Kastro of Ioannina instead of the fortified site of Megalo Gardiki.[72] In cooperation with Thalia Kyrkou, Nikos Choinas, Maria Dinou, and Eugenia Gkatzogia she wrote a guide book on Megalo Gardiki in 2015.[73]

Another important Molossian site is the neigboring Kastritsa, which during the last few years received an updated guide book by Paraskevi Yiouni, Chara Kappa and Ypatia Faklari. Yiouni has also excavated in Arta.[74]

Molossia has been thoroughly studied by Marie-Pierre Dausse, who wrote her dissertation on the historical geography of Classical–Hellenistic Molossia.[75] In that work, she located all 60 fortified sites within Molossia and visited 56 of them between March 1992 and April 2000.[76] She has published several articles on Molossian sites, studied the fortifications of the mountainous Tsoumerka region in the southwest[77], the principal land routes within and leading away from the region[78], and discussed the identification of the four fortified Molossian settlements besieged by the Romans in 168 BC.[79] All of her articles are interesting and thought-provoking, but unfortunately the maps provided in most are too sketchy to help in actually locating any of the sites. Dausse 2007 with its appendices, in which detailed maps of the surroundings of the five sites discussed are provided, is an exception to this.[80]

The Italians have been archaeologically active on the Albanian side of Epirus, first in the 1920s and 1930s, and again after 1991. Of the newer generation of researchers, Julian Bogdani and Enrico Giorgi in particular have been very active, having published many papers on Albanian fortified sites both individually and together.[81] In 2012 they published a thorough survey of sites in Chaonia.[82] The survey identified dozens of sites, many fortified. In the publication they also provided the UTM coordinates of the sites, albeit lacking

72 Pliakou 2011.

73 Pliakou et al. 2015.

74 Yiouni 2015; Yiouni 2008a; Yiouni 2008b.

75 M.-P. Dausse 2003: Géographie historique de la Molossie aux époques classique et hellénistique. Université Paris 10.

76 Dausse 2004, 181, n. 30.

77 Dausse 2011a. The paper lists the 14 small fortifcations in Tsoumerka: Kalarrites, Michalitsi, Khouliaradhes, Pramanda, Kalenji, Koukoulia, Gouriana, Katarrachthis, Mikrospilia, Chouka, Kipseli, Bouga, Rodavgi and Pistiana. Unfortunately, nearly all of them are so small and inconspicuous that they could not be found. Only Kalenji and Khouliaradhes could be found via other literary sources. Appendix II lists Kalenji as number 51 and Khouliarahdhes/Sirouno as number 53. Note also that Dausse's Chouka is not to be confused with Tsouka, number 54.

78 Dausse 2011a, Dausse 2011b.

79 Dausse 2007.

80 I managed to locate Paliouri/Dragoumi, number 83 in Appendix II, thanks to Dausse 2007, 217–218.

81 Bogdani 2006; Bogdani & Giorgi 2007.

82 Giorgi & Bogdani 2012.

the UTM zone or latitude band. The publication proved extremely helpful in locating many sites that proved hard to find from other sources.

Butrint, ancient Bouthroton, was first researched by the Italian Archaeological Mission under Luigi Maria Ugolini between 1928 and 1936, after which the Albanian archaeologists Dhimosten Budina, Neritan Ceka, Kosta Lako and Gjerak Karaiskaj conducted their excavations between 1959 and 1991.[83] Since the fall of the Communist regime, the Butrint Foundation has been conducting archaeological surveys, excavations and other research in and around Butrint and its *chora*. The work between 1993 and 2009 produced a wealth of publications in English[84]. The latest volume, the 2013 *Butrint 4, the Archaeology and Histories of an Ionian Town*[85] has corrected my earlier misconceptions of the Butrint fortifications as presented in Papers IV and V. The information in both was based on research published earlier (i.e., the guide book of the site by N. Ceka[86] and the 1984 analysis of the fortifications by G. Karaiskaj, re-published in 2009 by the Butrint Foundation in English).[87] Thus the dating information of Bouthroton here follows that presented in the papers, but the newer, more accurate dating presented in Butrint 4 has been added in the text.

Georgios Riginos has been very active in the field, especially in Thesprotia and Kassopaia. He has excavated and studied many smaller fortifications such as Pyrgos Ragiou and the tower of Elephtheri in the 1980s and 1990s. In the late 1990s and early 2000s he was the Ephor of the 32nd Ephorate for Prehistoric and Classical Antiques, under whose direction many large Thesprotian fortified settlements were excavated both by himself and other Greek archaeologists, in order to prepare the sites for tourism. These include Elea, Dymokastro, Doliani and Gitana, the excavations of which were followed by publication of a plethora of guidebooks in both Greek and English, written by the main excavators of each site: Georgios Riginos and Kassiani Lazari on Elea, Ekaterini Kanta-Kitsou on Gitana, and, together with Vasiliki Lambrou, on Doliani, while Kassiani Lazari, Antonia Tzortzatou and Katerina Kountouri wrote a guide on Dymokastro.[88] In the mid-2000s, Riginos attained a position as the Ephor of the Arta region, continuing the study of the fortifications of the

[83] Hodges 2013, 1, 4–5.

[84] Butrint Archaeological Monograph Series, Butrint 1–4: 1) R. Hodges, W. Bowden & K. Lako 2004, *Byzantine Butrint: Excavations and Surveys, 1994–1999;* 2) I.L. Hansen & R. Hodges 2007, *Roman Butrint: An Assessment;* 3) W. Bowden & R. Hodges 2011, *Butrint 3: Excavations at the Triconch Palace;* 4) Hansen *et al.* 2013.

[85] Hansen *et al.* 2013.

[86] Ceka 1999.

[87] Karaiskaj 2009, a translated and amended edition of his 1984 book *Butrinti dhe fortifikimet e tij*.

[88] Riginos & Lazari 2007; Kanta-Kitsou 2008; Kanta-Kitsou and Lambrou 2008; Lazari *et al.* 2008

southern areas. In collaboration with Christos Spanodimos, he studied Kastro Rizovouni, partly clearing the vegetation around the fortifications.[89]

Christos Spanodimos is the latest archaeologist studying the fortifications in and in the vicinity of Thesprotia. He wrote his 2014 M.A. thesis at the University of Crete on Thesprotian fortified settlements[90], and has since written articles on the fortifications of Gitana and the coastal site known as Lygia or Lygaria A–C.[91]

1.4.2 RESEARCH ON FORTIFICATIONS

Greek fortifications, in a broad sense covering the entire ancient Greek world from Sicily to the Euphrates and beyond have been studied by countless scholars, but here I shall introduce the most relevant ones for the present study.

The first was written by Robert Lorentz Scranton, who in 1941 published his M.A.-thesis, *Greek Walls*[92], where he presented a typology of Greek fortification walls based on the different masonry styles and their chronology. While his classification system is still usable today, his chronology represents the level of knowledge of the 1930s and 1940s and has become outdated. I shall return to this subject in detail in the following chapter.

Like Hammond's *Epirus* on Epirote sites and history, the 1971 monograph *Greek Fortifications* by the Canadian Frederick. E. Winter has become the standard handbook on fortifications[93] and was based on his 1957 dissertation at the University of Toronto. In his book, he examined every aspect of military engineering all across the Greek World and the volume even included a short appendix on Epirote fortifications, mostly unknown at the time.

Arnold Walter Lawrence published his synthesis, *Greek Aims in Fortification* in 1979.[94] Like Winter's book, this is one of the fundamental volumes on Greek fortifications. Lawrence concentrated not only on different structural aspects of the enceintes but also gave a short overview of the various siege methods available at different times as well as a translation of *Poliorketika,* a Hellenistic textbook by Philon of Byzantion on how to defend and fortify a city, written around the mid-3rd century BC.

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[89] Χ. ΣΠΑΝΟΔΗΜΟΣ & Γ. ΡΗΓΙΝΟΣ 2013, "Καστρί Ριζοβουνίου (Βατίες). Νέα δεδομένα και προοπτικές", in Σ. Μαμαλούκος, Γ. Ρήγινος & M. Stork, *Λάκκα Σουλίου ΙΙ. Πρακτικά του Επιστημονικού Συμποσίου «Λάκκα Σουλίου. Νέες ιστορικές και αρχαιολογικές καταγραφές» (Θεσπρωτικό, 28–29 Ιουλίου 2012),* Αθήνα 2013, 57–92.

[90] Χ. Σπανοδήμος 2014, *ΑΣΤΙΚΕΣ ΟΧΥΡΩΣΕΙΣ ΣΤΗ ΘΕΣΠΡΩΤΙΑ. Συμβολή στη μελέτη της οχυρωματικής της αρχαίας Ηπείρου,* Rethymnon 2014.

[91] Spanodimos 2019.

[92] Scranton 1941.

[93] Winter 1971.

[94] Lawrence 1979.

In 1982, Jean-Pierre Adam published his *L'architecture militaire grecque*[95], which concentrated on the Lycian fortress of Kydna, but the book also provided a good overview of the components of fortifications and a detailed description of a number of fortified sites across Greece, Asia Minor, Italy, and Sicily, the site closest to Epirus being Stratos in Acarnania. His hand-drawn illustrations of structural details, reconstruction drawings and axonometric illustrations are exemplary, and inspired me to try to do the same whenever possible.

Also in 1982, a conference on Greek fortifications was held in Valbonne, the proceedings of which were published in 1986 in a major volume titled *La fortification dans l'histoire du monde grec,* which featured a large number of articles.[96] Three are relevant to this study, the article of Jean-Claude Bessac on the use of stone in building fortifications, from quarrying to laying the stones in place; Anthony McNicoll's paper summarizing the advances in both fortifications and siegecraft from around 400 to 100 BC; and S.C Bakhuizen's paper on the Great Battery of Gorítsa.[97]

Lars Karlsson's 1992 dissertation *Fortification Towers and Masonry Techniques in the Hegemony of Syracuse, 405–211 B.C.* concentrated, as its title states, on Sicily.[98] Nevertheless, it has been useful in the current work as a reference concerning features of fortifications such as semicircular towers, rectangular towers with internal cross-walls, so-called abbreviated curtain walls and the occurrence of towers with a double outer facing in connection with internal cross-walls.

Originally completed in 1971, but only published posthumously in 1997, *Hellenistic Fortifications from the Aegean to the Euphrates*, the dissertation by Anthony McNicoll concentrated on sites in Asia Minor.[99] His work is a good overview of the eastern fortifications, and also meticulously lists the masonry styles of different fortifications, including informative hand-drawn illustrations and reconstruction drawings of different sites.

For Paper IV, two different studies on smaller details of fortifications were central. The development of vaulting was studied in detail by Klaus Dornisch in his 1992 dissertation *Die griechische Bogentore. Zur Entstehung und Verbreitung griechischen Keilsteingewölbes,* where he studied the 160 different true arches and their remains found across the Greek world, among which were three Epirote sites with seven vaulted gates.[100] A decade later, in 2001, Andreas Rathke presented and studied 103 corbelled, false vaulted gates of the Greek World in his dissertation *Griechische Kragsteintore. Typologie,*

[95] Adam 1982.

[96] Leriche & Treziny 1986.

[97] Bessac 1986; McNicoll 1986; Bakhuizen 1986.

[98] Karlsson 1992.

[99] McNicoll 1997.

[100] Dornisch 1992.

Konstruktion und Verbreitung vom 6.-2. Jahrhundert v. Chr.[101] Three Epirote enceintes with five corbels were also included in the study.

Although not of any great importance to the study of walls in general, Klavs Randsborg's *Kephallénia, Archaeology & History,* published in 2002,[102] has to be mentioned as the wall typology presented in the paper was used to a great extent from 2006 to 2011 when writing my M.A. thesis and the first three articles. Randsborg's typology was created to classify and date the fortification walls encountered in a survey on the island of Kephallenia, some 70 km south–southwest of Preveza in the southwestern tip of the current study area. Randsborg's typology and its problems will be dealt with in the chapter concerning wall typologies and their issues.

Emil Nankov's dissertation of 2009, *Phrouria Lokrika: Aspects of Military Presence in Hellenistic Opountian Lokris,* analyzed the 17 fortifications of the stated area found on the western coast of Greece, opposite Euboia.[103] The most important aspect of Nankov's study in relation to the current work is the frequency of fortification towers with internal cross-walls dated to the 4th and early 3rd centuries BC. The study also examined the much-debated issue of single towers located in the countryside –whether they were built for military purposes as lookouts, signal-stations, or perhaps even connected with agriculture.

In the same year, Judith Ley published her extremely thorough and exemplary two-volume dissertation on Acarnanian fortifications, *Stadtbefestigungen in Akarnanien. Ein bauhistorischer Beitrag zur urbanen Entwicklungsgeschichte einer antiken Landschaft*.[104] She meticulously analyzed and listed every aspect of the enceintes, towers, gates, and posterns, wrote extremely detailed data cards on all of the features, and drew plans of all the sites. As Acarnania is the closest neighboring area to Epirus, many of the issues raised by the study are applicable to sites in Epirus. Unfortunately, I only became aware of the study in late 2014, but since then, the volumes have been central to the work in my last articles.

Rune Frederiksen's 2011 dissertation, *Greek City Walls of the Archaic Period, 900–480 BC,* studied earlier enceintes from the Iron Age to the end of the Archaic period.[105] He dealt briefly with the inherent problems of masonry styles and their dating, but accepted the traditional system with some reservations. At the end of the book, Frederiksen compiles a catalogue of the Archaic city walls of the entire Greek world, from Sicily to Asia Minor. Three Epirote circuits are listed: Ambrakia, Boucheta, and Bouthroton.[106]

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[101] Rathke 2001.

[102] Randsborg 2002.

[103] Nankov 2009.

[104] Ley 2009a; Ley 2009b.

[105] Frederiksen 2011.

[106] In Appendix II Ambrakia is number 10, Boucheta/Bouchetion 13 and Bouthroton/Butrint number 94.

Matthew Maher wrote his 2012 dissertation *The Fortifications of Arkadian Poleis in the Classical and Hellenistic periods* on Arkadian city fortifications in the Peloponnese.[107] The study is comprehensive, with a description of each of the 19 enceintes followed by a chapter analyzing the topography, strategy, tactics and defensive planning behind each one. Masonry styles are referred to frequently, but the limitations of such a chronology are noted, and the result seems a credible analysis of Arkadian fortifications. The most important revelation of this study is the notion of the frequency of utilizing sun-dried mudbrick as the material for the wall superstructure on stone foundations, or in the breastworks of the 4th and 3rd century BC Arkadian fortifications. Like Arkadia, Epirus was not a central area of the Greek world, but rather on its fringes; what was the frequency of Epirote sites utilizing mudbrick superstructures? For his study, Maher created computer-generated 3D-illustrations of different fortifications and their constituent parts. His use of AutoCAD, SketchUp, or similar program in illustrating the structural masses of fortifications and the resulting perspective drawings inspired me to do the same (see Appendix III on re-evaluating the fortifications of Agios Donatos).

Published in 2012, Sylvian Fachard's *La defense du territoire. Étude de la chora érétrienne et de ses fortifications* is an important volume because of its methodology, presenting the results of an in-depth survey campaign of the Eretriad, the *chora* of Eretria in Euboea.[108] Fachard studied the function of the 35 rural fortifications in the Eretriad, the majority of which could be dated to between the 5th and the 2nd centuries BC, in their respective settings. His approach differed from Josiah Ober's 1980s study of the fortified sites of the neighboring Attica, in which Ober interpreted the fortifications as being nodes of a centrally planned fortification network (i.e., designed knowingly to enable defense in depth and to control the roads within).[109]

Fachard was able to show that the rural fortifications in the Eretriad formed no network aimed at guarding the borders or the roads. The fortified settlements were located more-or-less in the interior, and not along the borders. All were sited far from the city of Eretria, but at fairly regular distances from each other. He argued that, instead of being military outposts guarding the borders, they served as refuges for the dispersed rural population and as safekeeps for agricultural produce and domestic animals –i.e., the military aspect was not central in their planning.

The most recent major contributions to the subject are the two extensive volumes of the international research network, *Focus on Fortifications/Fokus Fortifikation* or *FoFo*. The six network meetings held between 2008 and 2011

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[107] Maher 2012. The study has since been published as a monograph: M.P.Maher 2017, *The Fortifications of Arkadian City States in the Classical and Hellenistic Periods,* Oxford University Press 2017.

[108] Fachard 2012.

[109] J. Ober 1985: *Fortress Attica. Defense of the Athenian Land Frontier, 404-322 B.C.* Mnemosyne Supplement 84, Leiden 1985.

and the final conference in Athens in December 2012 resulted in two large volumes published in 2016. The first, *Ancient Fortifications, a Companion on Theory and Practice*[110] was the first methodological synthesis of ancient fortifications meant to be used as a guide to research, and offers versatile approaches to the research of ancient fortifications. The volume consists of twelve articles by the network members on aspects of studying and interpreting fortifications, plus instructions on how to document the features of fortifications and their individual elements. The catalogue also serves as an example of how to present such accumulated information in a systematic way.[111]

The second volume, *Focus on Fortifications, New Research on Fortifications in the Ancient Mediterranean and the Near East* published 57 papers grouped under seven larger titles as represented in the final conference of the network in December 2012.[112] The titles useful to the present study were the second, *Physical Surroundings and Technique: The Building Experience*; the fifth, *The Fortification of Regions*; and the sixth, *Regionally Confined Phenomena*. The books introduced a new term, the Building Experience, which is the decision-making process behind the building of the fortifications, from the course of the walls and the materials used, to the siting and outlook of the gates and towers. The investigation of such aspects aims to present an economic evaluation of the construction of a site and to help understand the different decisions behind them. The time it took to build a fortification, its cost and the workforce required could be deduced from an examination of the techniques and materials used.[113]

[110] Müth *et al.* 2016a.

[111] Fachard 2016b, 77; Müth *et al.* 2016a, ix–xiii.

[112] Frederiksen *et al.* 2016.

[113] DeStaebler 2016a, 61– 68; 2016b, 123–126.

2 DATING THE FORTIFICATIONS

This chapter first presents the methodology used when writing the constituent Papers I–V, which, especially in the early articles, centered largely on the currently more-or-less abandoned masonry typologies and their relative chronologies. I utilized the wall typologies in my papers as at the time of their writing some 1 to 5 years prior to their publishing dates, the typologies and their chronologies seemed usable. After all, the roots of this study began as an M.A. thesis back in 2006–2007,[114] the core of which was transformed into the first article in 2009 and was followed by the others over the course of ten years. While my work progressed slowly due to a continuous lack of funding and the excruciatingly slow pace of the publication of the component articles, other studies of ancient fortifications all over the Greek world, especially proper archaeological investigations of many previously unexplored Epirote sites, advanced rapidly. As it is obviously impossible to change what was printed years ago, I will now explain the choices made and defend my work.

2.1 THE UTILIZATION AND PROBLEMATICS OF MASONRY TYPOLOGIES IN DATING

The whole concept of creating a wall typology based on the shapes of the blocks and then developing a chronology of such was developed in 1941 by R. L. Scranton in his book *Greek Walls*, within which he described and analyzed different masonry styles found in Greek fortifications. These were arranged into a chronology of developing styles in which the styles' development, flourishing, and subsequent replacement with other, more advanced masonry styles were detailed. In short, he classified the walls according to the shape of the blocks used and their surface treatments.

The blocks are either *quadrilateral* or *multilateral*. The first group includes ashlar and trapezoidal masonry. *Ashlar* masonry consists of quadrangular blocks with parallel opposing sides (e.g., a brick), whereas *trapezoidal* blocks have parallel upper and lower surfaces but at least one of the vertical sides is askew. The second group consists of multiangular, *polygonal* blocks that are irregularly shaped, with any number of straight sides meeting at different angles.

[114] M. Suha 2007: *The Walls of Agios Donatos Zervochoriou. A Case Study of a Fortress in Thesprotia, North-Western Greece.* Unpublished M.A. thesis, available in http://urn.fi/URN:NBN:fi-fe20072065; http://hdl.handle.net/10138/19522. [Accessed 6.8. 2019].

Ashlar and trapezoidal blocks are best laid in *masonry courses*. If the individual courses are of the same height, the result is called *isodomic* masonry, while *pseudo-isodomic* masonry consists of courses with differing heights, either varying or alternating between two kinds of course heights (i.e., low-high-low etc.). If the polygonal blocks are fairly similar in size, they can be laid fairly consistently, resulting in *coursed polygonal*. On the other hand, quadrilateral blocks of irregular sizes can also be laid in an irregular way without forming clear courses. In this case, the result is classified as *irregular ashlar* or *irregular trapezoidal*.[115]

Scranton then defined the surface treatment of the blocks. A *quarry face* means that the facing of the block has been left untouched since its extraction from the quarry, the facing being rough and bulging. *Hammer face* has an even coarser finish where the facing has been consciously roughened. *Broached work* consists of several downward-slanting grooves across the face. *Pointed work* means that the facing has been flattened but not smoothed, while in *tooled work,* the face is both flattened and smoothed.

The margins of the blocks can be drafted or beveled. *Drafted joints* have a smooth band 2–6 cm wide on one or more sides of the block, and the central portion can be left in a rough state. In *beveled joints,* the smooth band is chamfered to an angle of 45 degrees. The last type is purely constructional, and not decorative like the previous ones. It consists of a bevel of 3–4 cm along the lower edge of the block with a chamfer of one centimeter. Such a treatment was used to prevent chipping of the facing while setting the stones.[116]

He further sub-divided polygonal masonry into "normal" polygonal and its beautiful but labor-intensive variant, *Lesbian masonry,* which is distinguishable by its beautifully carved, curvilinear seams. As there are no occurences of Lesbian masonry in Epirus, it will not be discussed in this thesis. Scranton dated the use of polygonal masonry to between the early 5th and the 3rd centuries BC with the apex of the style around the mid-5th century. In Attica some "archaistic" walls were still built of polygonal masonry during the 4th century, and in the Peloponnese coursed polygonal was popular during the late 4th and early 3rd centuries BC. Coursed polygonal still flourished in the Peloponnese when it was largely abandoned elsewhere.[117]

Trapezoidal was considered to be the next stage in masonry development. The earliest form was irregular trapezoidal, a transitional style from polygonal to trapezoidal with no clear coursing of blocks. The tendency towards coursing advanced with time. Irregular trapezoidal could not be dated, although nine out of 39 circuits were given a 5th century BC date. A more advanced version, isodomic trapezoidal with quarry face was dated to 425–375 BC, while half of

[115] Scranton 1941, 16–19.

[116] Scranton 1941, 20–23.

[117] ibid. 55–69.

the listed walls with pseudo-isodomic trapezoidal work were dated to the 3rd century BC. [118]

Ashlar was considered to be the most advanced masonry style, the ideal Greek masonry. Ashlar walls listed consist almost exclusively of isodomic work, with only a few instances of pseudo-isodomic or irregular ashlar masonry "of inferior quality". Scranton dated isodomic ashlar with a quarry or tooled face to 425–375 BC. For pseudo-isodomic ashlar walls with two alternating course heights and an elaborate system of headers and stretchers, he assigned a Hellenistic date.[119] Isodomic ashlar with a tooled face and drafted margins were dated from the 5th century down to 275 BC. Isodomic ashlar with beveled edges was connected to the Macedonians in the 320s–270s BC.[120]

Scranton had very little experience with the wall circuits of north-western Greece. There is only a single reference to the walls of Ambrakia, built of isodomic ashlars with tooled faces. The site is erroneously listed as belonging to Thesprotia and without any dating.[121] The closest sites are in Acarnania: Limnaia/Amphilochia, Palairos, Stratos, Komboti, and Alyzia. In the north the closest reference is to the walls of Lissos, modern Lezhë, some 140 km north of the northern border of this study.[122]

The study is well presented, and the arguments as based on the knowledge of the day seem sound. However, the study of fortifications has advanced greatly in the intervening years and the number of excavated sites from all over the Greek World and adjacent areas has grown immensely. With the emergence of scientifically based dating evidence, especially since the development of radio carbon dating in the 1950s, the study has become outdated. His masonry classification system is a useful tool in describing the masonry, but is now redundant as a means of dating the walls.

Hammond did discuss the dating of Epirote fortifications, and based it on Scranton's typology, but also added his own notions, such as the size of the masonry (i.e., large polygonal, medium polygonal, etc.). He dated the walls built of massive ashlar blocks with corner drafting and a quarry face, such as those found in the acropolis walls of Phoinike, Kara-Ali-Bey and Kalivo[123] to the last quarter of the 4th century BC and concluded that the Chaonians had captured the area from the Corcyraeans sometime between 360–325 BC.[124]

Winter cited Scranton's masonry styles in his *Greek Fortifications* but revised the typology slightly. Additionally, he argued that different masonry styles found in any single circuit could simply indicate different workshops or

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[118] ibid. 72–93.

[119] Scranton 1941, 99–112, 134.

[120] Scranton 1941, 129–132.

[121] Scranton 1941, 178.

[122] Scranton 1941, 84, 162, 165, 167, 173

[123] In Appendix II, Phoinike is number 117, Kara-Ali-Bey number 110, and Kalivo number 95.

[124] Hammond 1967, 572–573.

gangs of masons simultaneously working in the same enceinte according to their own traditions, and not necessarily different times of construction.[125] He even discussed Epirote fortifications briefly in the appendix to his chapter on materials and masonry styles. Furthermore, Hammond's book was published after Winter's appendix had already been written [126]

Criticism of using masonry styles as dating criteria had already emerged in the early 1960s in Franz-Georg Maier's *Griechische Mauerbauinschriften II* of 1961, and the critical view continued in the following decade in the studies of Astrid Wokalek and A.W. Lawrence.[127]

McNicoll also referred to Scranton's typology and dating based on masonry types, although in his posthumously published dissertation the stylistic approach was critically viewed and carefully accompanied by other features of the fortifications to obtain a credible chronology. All different types of masonry encountered in each studied circuit were presented and accompanied with appropriate photographs of each. Progressing diachronically, he arranged the enceintes into roughly contemporary groups, then scrutinized each group before moving on to the next.[128]

In the early 2000s, masonry typologies still appeared to be a useful method, forming the basis for classifying and dating the fortification walls found during a survey project of Kephallénia. For this project, Klavs Randsborg devised an updated wall typology, published in 2002, which is a refinement of Scranton's, with 27 distinct masonry types, 14 of them polygonal.[129] The walls have plenty of comparanda located all around the Greek World. The comparisons, in turn, were dated with varying degrees of certainty before 2002. However, many of the comparanda used in the book are located in Epirus, and their dating is in many cases based on Hammond or his contemporaries. Thus the typology is problematic, and the classification of different masonry types is in many cases very vague and overlapping.[130] I utilized Randsborg's typology when studying the fortifications of Agios Donatos in 2006–2008 for Papers I and II, and again for Paper III when examining the walls of Elea in 2010–11, thinking that the plethora of masonry types accompanied by several photos of each would offer a usable foundation to my arguments, despite the difficulties therein.

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[125] Winter 1971, 80–83.

[126] Winter 1971, 98–100.

[127] Maier 1961, 95–99; Wokalek 1973, 10–110; Lawrence 1979, 232–245. I was unaware of this early criticism on masonry types by Maier or Wokalek, and blind to Lawrence's criticisms despite reading through his book countless times at the time I was writing Papers I–V.

[128] McNicoll 1997, 14.

[129] Randsborg 2002, 207–291.

[130] For example, the overlapping distinctions between the polygonal Types 8, 9, 10 and 11 and their associated photos in Randsborg 2002, 216–227, figs. IX. 14–IX. 26, plates B XXXII,1, B XXXIII, 1–2, B XXXIV, 1, B LXXXXVII, 1, B LXXIX, 2, XXXXII, 1–2, B XXXXV, 8, B XXXXVI,1, B XXXXVII, 1–2, B XXXXVIII, 1–2, B XXXXIX, 1, B LVIII, 1–2, B LIX 1–2, B XXV, 2, B XXVI, 1, C II, B LXXVII, 1–2, B LXXVIII, 1–2, B LXXX, 1, B LXXXII, 1–2. B LXXXV, 1 and B LXXXVIII, 2.

Originally written in 2000–2004 and expanded into a book over 2005–2009, Rune Frederiksen's dissertation, published in 2011, analyzed the Archaic enceintes of the Greek World, dividing the 121 discussed circuits into three categories: A, B and C. The first category (A) consisted of sites dated through external evidence, such as excavations, thus being the most trustworthy. However, category B was the largest including 55 sites dated *through masonry style,* indicating that at the time, it was still seen as an acceptable method.[131]

Matthew Maher also utilized the masonry types and their chronology extensively in his 2012 study. He addressed the inherent difficulties of such[132] and was still able to produce a credible chronology of the local fortifications by supplementing it with a methodological examination of other structural details of the enceintes, as well as their historical backgrounds. Despite the weakness of the masonry style chronology he was able to show a logical continuum of the Arkadian city walls stretching from the late 5th to the latter half of the 3rd century BC.

To conclude: Masonry styles, or rather, types, were a 1940s attempt to date fortification walls through stylistic analysis, comparing the shape of the blocks to similar masonry somewhere else, the comparison then having been dated by some other means. While the first criticisms of the method had already been voiced in the 1960s–1970s, some scholars were still using the masonry styles even as late as the 2000s, although by then much more carefully and critically. Being unaware of the virtual abandonment of masonry type dating, I followed the example set by those still referring to the styles. While the styles could still be used to describe the masonry in walls, they were useless in dating. Indeed, in the newer literature not even the term "masonry style" is used, having been replaced by *masonry forms* or *masonry types*, referring only to the shapes of the blocks.[133] These shapes are dependent on the natural properties of the rock available, how it was split and what kind of blocks it thus yields, (i.e., flat, narrow, oblong, or multi-faceted). They are not a conscious, artistic choice of the masons following some pre-set style in vogue at a given time.

2.2 OTHER METHODS OF DATING A FORTIFICATION

In all, fortification walls have been notoriously difficult to date without a stratigraphic excavation, preferably of the wall itself, with the aim to recover diagnostic, datable finds from within or below the walls or other fortifications.

[131] Frederiksen 2011, vii–viii, 111–112, fig. 8.

[132] Maher 2012, 74–79.

[133] See for example Müth *et al.* 2016, 5, Brasse & Müth 2016, 75 f. The term "masonry form" seems to derive from German (i.e., Mauerwerksform).

In 1961 Franz-Georg Maier stated that city walls should be first dated through the archaeological data, secondly via epigraphy, and thirdly using the literary, (i.e. historical) evidence.[134]

In Ley's dissertation on the fortifications of Acarnania, she concluded that masonry types and other isolated, individual traits of fortifications are simply an erroneous way of dating the fortifications. Trustworthy evidence offering clues to the absolute dating of a wall can only be obtained through excavation and from literary evidence, such as wall inscriptions or local events recorded by ancient historians. According to her, fortifications are functional structures built by locals upon local masonry traditions and are not subject to quickly changing artistic ideas and architectural styles that could be dated through a stylistic analysis. She then outlined a method with which the building date of a fortified site could at least be limited to a certain period: the different building phases of several fortifications within a certain area should be examined and thoroughly documented, after which a comparison between as many fortifications as possible within the area should be conducted. Additional information should then be combined with the results of previous studies such as archaeological material from the settlement, historical information on sieges etc.[135]

The *Fokus Fortifikation* network culminated their work in 2016 with the publication of their two major volumes. The first, *Ancient Fortifications. A Compedium of Theory and Practice* presented the current state of fortification research, applicable dating methods, and the criteria for such. Their conclusions were that despite the existence of a huge number of fortifications all around the ancient Mediterranean, only relatively few have ever been reliably dated. Difficulties in dating a site have arisen from the scarcity of properly excavated fortifications together with the lack of building inscriptions and/or decorative elements within the fortifications, which unlike the functional, undecorated walls, could be dated through stylistic analysis. In the first chapter of the book, Müth *et al.* outlined the recommended methodology for dating a fortification: a combination of archaeological excavation and survey(s), architectural survey and possible use of literary sources and epigraphy (i.e., building inscriptions).

If possible, archaeological excavation and the associated finds should, naturally, be the primary means of dating a site and its fortifications. Finds from the fill of a curtain, or from underneath a wall or tower, indicate when they were deposited in their respective places, (i.e., when the filling was poured in between the wall faces, or when the blocks were placed on top of a find). Archaeological surveys, extensive and intensive, might offer new insights into the nature and the dating of a fortification: the course of the wall, when obscured, could be studied through an extensive survey, while an intensive

[134] Maier 1961, 93.

[135] Ley 2009a, 178–180, 200.

survey of a site could yield surface finds that might clarify the period when a site was in use.

Architectural survey is the careful recording of all the architectural features of an enceinte, such as the joints between different sections of wall, the extensions of circuits, and any blocked openings. These help in establishing a relative sequence of building phases for a fortification. Comparing the data obtained with other similar monuments could then lead to establishing the absolute chronology of a site. Building materials and regional particularities should also be taken into account. While the facing (i.e., the elevation of the masonry) is still considered one of the most important features for comparison, only in very few cases can it be considered a reliable criterion for dating.[136]

Literary sources consist of the historical sources mentioning a site or region. They might include mentions of the foundation of a settlement, the building of its fortifications, the possible demolition and alteration phases of the walls, as well as mentions of sieges, both successful and unsuccessful. In addition to the historical and geographical books, there are manuals on conducting siege operations and the operation of siege machinery, and also on counter-measures to such. Two examples are Philo of Byzantion's *Poliorketika* and Aineias the Tactician's *How to Survive a Siege*. They give insights into the state of siege warfare and the know-how of fortification building during the time of their writing, which in the case of Philo was around the middle of the 3rd century BC, and a century earlier for Aineias the Tactician.

Knowledge on the historical development of poliorcetics (i.e., the art of conducting and resisting sieges) over the course of the centuries is helpful in trying to establish the chronology of fortifications, as the fortifications had to adapt to the changing poliorcetics. The earliest methods of storming a fortified site were simply climbing over the walls with scaling ladders, or trying to breach the wooden gate by some means, even by burning.

More advanced siege techniques were introduced to the Greek world from the east by the last decades of the 5th century BC. Rams were used in Greek sieges by the time of the Peloponnesian War. They could be used against the gates, or to breach a curtain wall and bring down a defensive towers/ bastions. Rams could also be brought to bear upon the narrower upper portions of walls or even flimsier battlements, by building an earthen siege ramp. Mining, (i.e., tunneling beneath the walls, shoring up the tunnel with timbers and then setting them ablaze to cause a collapse of the ground and the wall above), was also used during the Peloponnesian War.

Catapults were invented by 399 BC in Sicily, first as anti-personnel weapons discharging large arrows. Stone-shooters capable of damaging thin parapets followed fairly soon after. Catapults were adopted as defensive weapons by the mid-4th century BC at the latest, and around that time the greatest advance of catapult engineering –new, much more powerful torsion

[136] Müth *et al.* 2016b, 10–15.

spring bundles –were also invented. Enclosed towers capable of housing multiple catapults in weather-proof conditions became common, and they were deployed more regularly around the circuits. By the 330s BC, catapults had become a formidable threat. While they still were unable to truly breach the thick curtain walls, they could knock down even the more advanced, thicker parapets and tower walls during a protracted bombardment.

The development of siege machinery and tactics is evident in fortifications, as countermeasures were adopted. Early circuits were passive; the defenders trusted in the walls to keep the assailants out. As poliorcetics advanced, the defenders were required to make sorties out of the cover of the walls in order to destroy the attackers' equipment. To enable the sorties, the inclusion of a number of posterns or sally-ports opening in different directions became common by the last decades of the 4th century BC. To keep the rams and siege towers from reaching the walls, ditches and moats, as well as *proteichismata,* or outer walls, were built.

During the decades following the death of Alexander the Great, the wars of the Successors drained the wealth and manpower of the various Greek factions, so that by the first half of the 3rd century BC the defensive perimeters of some large city circuits were drastically reduced by *diateichismata,* partition walls, requiring much smaller numbers of defenders to man them. Such is evident, for example, in Stratos in Acarnania.

By the end of the century, large, well-equipped siege trains capable of long sieges, as used by the earlier generations, had become uncommon. Now the attackers again reverted to fast strikes using light, portable equipment such as scaling ladders in simultaneous attacks by several assault parties across an enceinte.[137]

While the historical sources do shed light on the development of some settlements, poliorcetics and fortifications, one should tread carefully when using them as they might be misleading. A settlement might have been founded at a certain point of time, as mentioned in a historical source; however, such settlements would not necessarily have been fortified immediately due to a lack of funds. Furthermore, the possible aggressors could be equally poor and not have any up-to-date siege equipment. Small scale raids by pirates, for instance, would have been more likely than determined sieges by large professional armies in some areas.

Building inscriptions offer an additional method of dating a wall circuit, if they can be connected either with its original building phase or later alterations of a circuit or its components. Such inscriptions can be located near gates or towers, as they usually contain statements on patronage –the sponsorship of the construction works and materials. Building inscriptions can also yield information on the dedication of the works, their design, or even accounting. However, they rarely offer any exact dates.[138]

[137] McNicoll 1986, 307–313.

[138] Müth *et al.* 2016b, 10-15.

Later chapters in *Ancient Fortifications* outline a recommended course of action and the proper conduct for an investigation and documentation of a fortification. Regardless of the situation, the fortifications of a site should be documented in a systematic, formulaic way in a "Book of Walls",[139] resulting in a "Wall catalogue" of a site. This catalogue should include an overview of the site and standardized descriptions of the constituent elements of the fortification, with descriptions of masonry types and the dimensions of its various elements. Each differing part of an enceinte should individually and systematically be described in detail, and be accompanied by photos and sketches of features. In conjunction with the verbal documentation, measuring and mapping the results in a detailed plan should also be undertaken.[140]

Additionally, small details in the structure of the enceinte or its components should be documented with care as they could offer clues as to the dating. For example, clamps could have been used to secure the blocks of a tower; while clamps were rather commonly used in temples, in fortifications they are much rarer. Vertical grooves cut into the bulging masonry, along with closely associated clear-cut drafted margins at the outer corners of fortifications are further examples of such details.

When I conducted my own small-scale research in 2005–2015 for the papers presented here, such a handbook on ancient fortifications or their documentation, and the idea of wall catalogues and such, did not exist. I conducted the research to the best of my ability considering the available time on site and my initially slow pace of total station measuring at each. While not aware of the recommended proper approach outlined by Ley, Müth *et al.* or Ley, Richter and Jansen, what I accomplished was a poor man's version of such; in my notebook, I described the masonry and the structural features of the enceintes and analyzed their defensive features, and these notes then formed the basis of my last three papers. In addition to the notes, I also photographed and measured the sites and the component details with a total station. However, with my meagre financial resources, clearing the vegetation to expose the tops and facings of the enceintes was not an option. Only in Agios Donatos and Kioteza, under the auspices of the larger project of which my work was but a small part, did any clearing occur. Additionally, Elea had already been cleared by the local Ephorate while preparing the site for tourism. In most of the sites I visited any measuring, photographic documentation, or closer inspections of the walls were undertaken whenever the vegetation allowed.

In order to date the fortifications I utilized masonry types in Papers I–III in 2006–2011, as by that time I had not encountered any material that would have clearly warned me not to do so, nor was there anybody who would have told me the same. I only became aware of Ley's work by the time I was well underway writing Paper IV, but still referred to masonry typologies in both

[139] Literally, "Mauerbuch", "Mauerkatalog".

[140] Ley, Richter & Jansen 2016, 24–29.

Papers IV and V, albeit not as frequently as before. Having conducted the research and written the papers completely by myself, without any assistance on the methodological issues, I conducted the research to the best of my ability, and according to what I had learned from the previous literature.[141]

I admit that my earlier reasoning stands on a very shaky foundation, yet I still stand by most of my arguments, which were founded on the best of my knowledge at the time. Over the years some of my claims have been proven erroneous, while on some other issues I have come to reconsider the evidence and changed my mind. Accordingly, in Chapter 4, the overview of the papers, whenever an erroneous claim was made in an article, or newer research has caused me to change my position, I will raise the issue in a footnote. Some of my earlier claims that have since been proven erroneous by later excavation or other research will be treated similarly.

2.3 CONCLUSIONS: TOWARDS A RELIABLE EPIROTE FORTIFICATION CHRONOLOGY

Epirus, despite its geographically central position between the Greek, Illyrian and Roman worlds, was always on the fringes of Greek civilization. Thus, ancient authors made relatively few references to the local sites, as the authors concentrated more on describing the general landscape and sea routes along the coastal waters of Epirus, the local tribes, and movements of military forces and their generals over time. The few Epirote sites that are mentioned are mostly the largest settlements such as Ambrakia, or the early colonies such as Elatria and Bouchetion. If a site is mentioned by an author, the reference will be taken into account.

As the Epirote fortifications are utilitarian in nature, they have no decorative elements. A wall is a wall, albeit some, like the eastern fortifications of Elea, are imposing even today. Thus, there are no wall inscriptions in the enceintes to commemorate the building of circuits, their renovations, or any extensions in any of the sites discussed in Papers I–V. Indeed, I have no knowledge on any inscriptions that could be connected with *any* Classical–Hellenistic Epirote fortification.

With the abandonment of masonry types and their relative chronologies, we are left with even fewer sources upon which the chronology of "ancient" Epirote fortifications could be based.

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[141] While Papers I–III were edited countless times between the original submission and the final publication dates, all the alterations to the manuscripts were in connection with the structure of the texts and the language issues within. There was no criticism on the methodology, neither from the editor nor peer reviewers. To this day, Paper IV has not been commented on in any way, except that it was "good" and accepted for publication. Paper V and its methodology was accepted as such, and the little editing required mostly consisted of attempts to abbreviate the extensively long manuscript.

When writing Papers I–II, I only had very limited archaeological material at my disposal. That material was excavated from 2005 to 2008 at only two small fortifications, Agios Donatos and Kioteza. Unfortunately, the rich find material was mostly inconclusive, consisting almost exclusively of later Roman phase material at Agios Donatos and undatable, worn and undiagnostic material at Kioteza. However, some other sites such as Pyrgos Ragiou, have been thoroughly excavated, and in those cases, the published archaeological material was taken into account in trying to establish a chronology.

Architectural surveys at the sites discussed in Papers I–V were conducted sporadically over the years. For both Agios Donatos, Kioteza, and Doliani, I was given the maps measured and drawn by others; for Nekyomanteion, Bouthroton and Kastritsa I relied on the maps in publications. However, assisted by several people over the years, I thoroughly measured the enceintes of Kassope, Kastri Rizovouni, Elea, Pyrgos Ragiou, Gitana, Megalo Gardiki and Dodona with a total station and drew the site plans in a CAD program using the measurement data.

In addition to the accurate measurement data, yielding information on distances and directions that can be obtained from the programs at any time, the documentation of all of the sites included photographic documentation of all the features and their written description in a notebook. This resulted in identifying the crosswalls within towers and the compartmented curtains not mentioned by others in Kastri Rizovouni, Elea, Gitana, Megalo Gardiki, and Pyrgos Ragiou.

Certain features in the architecture and execution of the fortifications do shed light on the most likely date of a fortification. Curtains, gates and bastions or towers developed with time in response to poliorcetics. The frequency of flanking structures grew and were built more systematically around the circuits to offer mutual support in repelling the attackers. While the early circuits were based on passive defense, the advance of siege techniques forced a new kind of active defense to be adopted, requiring the placement of numerous sally-ports all around the circuits. Outer defenses were likewise built to slow the advance of rams and siege towers.

3 FORTIFYING EPIRUS

This chapter first introduces the types of fortifications found in Epirus, followed by the key concepts of fortifications and their component parts, along with the dating evidence for each, as drawn from the research literature. These are relevant to the reader, as the various terms will be used frequently from now on.

All of the sites mentioned in this chapter are compiled in Appendices I and II. Appendix I lists all of the names and aliases of the sites that are presented in detail in the Site List, Appendix II. This lists all of the 154 identified Epirote fortifications of different periods. Note that 26 entries of the total count are of a later date (i.e., Byzantine, Medieval, Ottoman, etc.), and as such, they will be excluded from the forthcoming tallies.

Thus, in all, 128 "ancient" fortified sites are taken into account in this chapter; this total includes the 13 fortifications examined in Papers I–V, which will only be presented and analyzed in detail later, along with their dating evidence, in Chapters 4.1–4.3. Excluding those, examples the data and the dating evidence on the sites discussed here has been gathered exclusively from the research literature. Note also that the Appendices only list sites that were possible to locate by cross-referencing literature, maps, and Google Earth imagery: there are indications of at least several dozen fortifications not included in the study, as they could not be found.

3.1 TYPES OF FORTIFIED SITES

To begin, the different types of fortified sites found in Epirus are presented. Their classification system has been slightly revised from Sylvian Fachard's typology for rural Greek fortifications ecountered in an archaeological survey. He classified the sites into five categories: "Fortified settlement", "Fortress", "Tower", "Rubble fort and enceinte", and "Non-urban long-wall". [142] For my purposes, I have slightly altered the category descriptions and titles, and included large urban sites such as city circuits into the first category.

The first type is a *fortified settlement* encompassing settlements of varying sizes, ranging from 1 to 120 hectares. The settlements encompassed by the fortifications can be classified as hamlets, villages, towns or cities depending on their size. This type of site is the second most common in Epirus, with 34 enceintes of a pre-Roman date. In addition, there are eight cases with an uncertain identification that can be interpreted as either fortified settlements *or* forts; the distinction is unclear. As there are so many fortified settlements,

[142] Fachard 2016a, 215–222.

I will not list them here, or concentrate on the smaller examples or sites with less certain identification. Instead, I examine only the largest examples of true *city walls*, which stand out from the group. I set the size limit of a city to 10 ha and above, thus ending up with 15 of the 34 enceintes meeting this criterion: Ambrakia, Paliorophoron, Kassope, Kastri Acheronta, Kastro Rizovouni, Dymokastro, Elea, Gitana, Kastritsa, Megalo Gardiki, Phoinike, Saraginisht, Ploçe, Gradisht and Klos.[143]

Of these, Ambrakia is both the largest at 120 ha, and the oldest, having an Archaic founding date of the late 6th or early 5th century BC. [144] The remains of the massive curtains (3.5–5.6 m thick) have been discovered in several locations under the modern city of Arta. The Archaic fortifications consist of a still-preserved stone plinth once topped by a mudbrick superstructure. The plinth is around 1.7–2.4 m high and the wall facings are bound by regular crosswalls. In some places, the walls have small offsets that are too shallow to provide enfilading (i.e., they cannot be considered to be jogs).[145] The masonry used here is large tooled faced ashlar (Fig.4). Large smooth faced ashlar masonry is not common in Epirus; only one comparison can be found. The Dema Wall[146] across the Hexamili Peninsula has similar masonry, although the Dema Wall was built of stone throughout, and has been dated to the 5th century BC.[147] Ambrakia also has stretches of later walls dated to the 4th century BC. The masonry is still ashlar with a mudbrick superstructure, but is slightly different in appearance. In 2003, a stretch of wall built of quarry faced rather flat ashlars was reported in the northeast corner of the city, close to the Byzantine-era Castle of Arta.[148]

[143]In Appendix II, Ambrakia is number 10, Palirorphoron/Elatreia 13, Kassope 14, Kastri Acheronta/Pandosia 20, Kastro Rizovouni/Batiai 21, Dymokastro/Elina 42, Elea 47, Gitana 63, Kastritsa/Tekmon 77, Megalo Gardiki/Passaron 80, Phoinike 117, Saraginisht/Antigonea 137, Ploçe/Amantia 148, Gradisht/Byllis 152 and Klos/Nikaia 153. Kassope, Kastro Rizovouni, Elea, Gitana, Kastritsa and Megalo Gardiki will all be presented in detail in Chapters 4.1–4.3.

[144] Frederiksen 2011, 128-129; Andreou 1993, 91-93.

[145] For explanation of jogs, see Chapter 3.2.3.

[146] Dema Wall, number 111 in Appendix II.

[147] Cabanes *et al.* 2008, 82; Giorgi & Bogdani 2012, 249.

[148] Excavation at Iraklion st., with a straight stretch of curtain. A large semicircular tower was added to the pre-existing wall at a later date accoding to Yiouni 2003, 81–84, fig. 47. More information on the tower below, in Chapter 3.4.2.

Figure 4 Ambrakia, curtain on the western side of the Archaic circuit. Note the very smooth facing of the exceptionally long ashlars. Two shallow offsets and a drain are also visible. View towards the north. Photo M. Suha 2008.

The frequency of mudbrick superstructures in Epirote fortifications will be examined later; at this moment it is sufficient to say that four of the 15 large sites contained remains or other indications of such. As shown by the remaining eleven examples, it is safe to say that the majority of large city circuits had walls built of stone throughout. Excluding Ambrakia, the initial phases of other city circuits have been dated as follows: Ploçe and Klos to the 5th century, whereas Paliorophoron is loosely dated to between the end the 5th century and 343/2 BC. The earliest phase of Phoinike has been dated to the first half of the 4th century, while Kassope, Kastro Rizovouni, Kastri Acheronta, Elea, Dymokastro and Gradisht all originated around the mid-4th century BC. Gitana and Megalo Gardiki represent a slightly later stage, the last quarter of the 4th to early 3rd century BC.[149] The latest large city circuit is that of Saraginisht, identified as ancient Antigonea.[150] The site has a huge circuit surrounding an area of approximately 45 hectares located on the summit of a narrow ridge in the mountainous landscape some 7 km east of Gjirokaster. The walls have been dated to the first quarter of the 3rd century BC, and a historical reference claims that the city was founded in 297–296 BC and named after Antigone, one of Pyrrhos' wives.[151]

The second type, the most common fortification in Epirus, is a *fort,* comprising 54 sites. In addition, there are another 13 cases where

[149] On dating: Cabanes *et al.* 2008, 208 on Ploçe, Ceka & Muçaj 2005, 85–87 on Klos, Dakaris 1971, 43, 167, 174–175 on Paliorophoron and Kastri Acheronta, Cabanes *et al.* 2008, 100–110 on Phoinike, Lazari *et al.* 2008, 31–32 on Dymokastro and Cabanes *et al.* 2008, 164–174. On Kassope, Kastri Rizovouni, Elea, Gitana and Megalo Gardiki see Chapters 4.1–4.3.

[150] Saraginisht/Antigonea, number 137 in Appendix II.

[151] Çondi 2018, 531–538.

identification is uncertain due to the difficulty of differentiating whether a site is a fortified settlement or a fort.[152] By definition, forts are military installations designed to house a garrison, usually built in lofty, strategic positions, but they can also temporarily shelter a civilian population, and in many cases civilian settlements can be found in the vicinity of such.[153] The sizes of forts vary from minuscule sites such as Malathrea, with an area of 346 m², to large fortresses such as Dodona at 3.4 ha.[154] An interesting example of a small fort is Malathrea, the only Epirote example of a distinct shape known as a *tetrapyrgion* or *tetrapyrgon* (Fig. 5). As the term suggests, a tetrapyrgion is a rectangular fort with four towers, one projecting from each of its corners. Malathrea is located on a gently rising hill to the north of a coastal plain some 9 km southeast of Bouthroton. The central portion of the fort is a square formed by four curtains that are 18.5 m long, 1.6 m thick and standing up to 4.5 m high in places.[155] In each corner there is a tower projecting 2.6 m from the curtains on either side. The square, hollow-based towers measure 5.0–5.5 m per side, with walls 0.8–1.1 m thick, built of two faces of blocks bound by frequent headers and no infill.[156] The ground floor chambers of the towers are peculiarly high at 4.0 m. A corbelled gate 2.5 m wide by 2.7 m high is located in the west wall.[157] Grooves measuring 15 x 19.5 cm at the entrance indicate the presence of a portcullis. In the center of the fort is an open courtyard 8 m square surrounded by mudbrick inner walls. The courtyard rooms, between the curtains and the inner walls, were topped by shed roofs sloping toward the courtyard in the middle. Cabanes *et al.* argue that the site would have been a *phrourion,* a fort with a permanent garrison on guard duty housing perhaps 50 soldiers, which seems credible.

[152] Depending on their sizes, forts also have alternative names: the smallest can be called *fortlets*, slightly larger ones *forts,* and the largest *fortresses*. However, as I have not come across any clear-cut criteria on the terminology except for a short listing in an architectural dictionary, I will only use the all-encompassing term fort. On terminology, see Ginouvès 1998, 20–21.

[153] Fachard 2016a, 216–218.

[154] In Appendix II, Malathrea/Malahuna is number 90 and Dodona 56.

[155] Cf. Nekyomanteion with its central tower ca. 21 m square, with walls 3.3 m high and thick.

[156] Cf. the tower of Agios Donatos, the auxiliary rooms around the central tower of Nekyomanteion, the towers in the diateichisma of Gitana, and the Tower Gate at Bouthroton, all with such walls.

[157] I had no knowledge of this site when I was writing Paper IV, thus the corbel there was not considered in the text. The shape of the corbelling is not stated. An isometric reconstruction drawing in Cabanes *et al.* 2008, 95, fig 4, shows a cut-out of the fort with a semi-corbel with trapezoidal consoles.

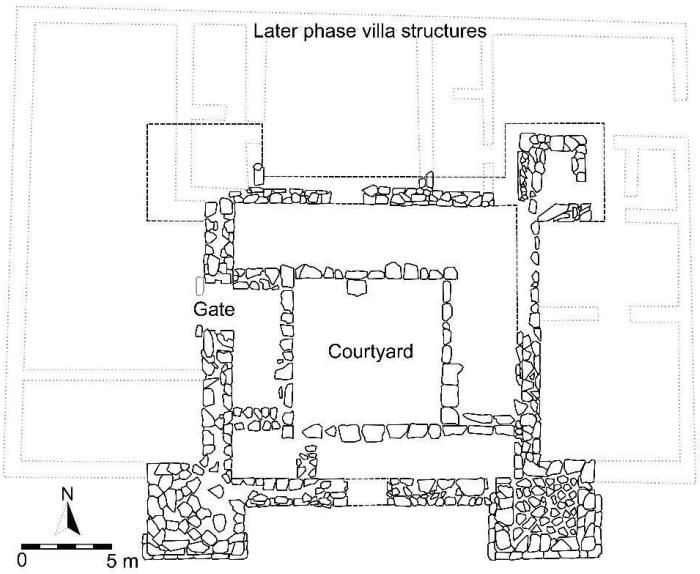

Figure 5 Malathrea. The original *tetrapyrgion* drawn in black lines and dashing, the walls of the later *villa rustica* drawn in light gray dashing. Illustration by M. Suha 2020 after Giorgi & Bogdani 2012, figure 34 in page 253.

According to Lawrence, while such a fort "became canonical under the name *tetrapyrgion* during the Roman and Byzantine times", it was actually a Hellenistic invention, with the first example at Theangela dated to the 4th century BC.[158] Two other early examples can also be found in Asia Minor, in Latmos. Unlike the regularly shaped tetrapyrgia of Theangela and Malathrea, the Latmian examples are irregular in shape, one being somewhat pentagonal and the other trapezoidal. Both were still classified as tetrapyrgia by Peschlow-Bindokat, who called them the north fort and the inner citadel.[159] Both are located within the city walls of Latmos, the north fort forming a part of the northern city walls and the inner citadel being located in the center of the settlement. The inner citadel is slightly more regular in shape, having a trapezoidal shape with three towers projecting from the walls and one in reverse. The reverse tower in the southwest also differs from the others by being considerably larger, 7.7 x 10.5 m, with its interior divided into two rooms.[160] The masonry is of high quality and the walls are 1.5 m thick, which according to the author speaks to the existence of several floors, most likely

[158] Lawrence 1979, 178, fig. 31. The dating of the tetrapyrgion in Theangela is disputed. Some date it to Mausollos' reign (377–353 BC), some note that there were two forts in the area by 314 BC, according to McNicoll 1997, 45, n. 124, 54.

[159] "Nordfort", "die Innere Zitadelle".

[160] See the discussion on tower sites below.

three.[161] Peschlow-Bindokat dated the fortifications of Latmos and both tetrapyrgia to the 4th century BC. According to the author, the Latmian and Theangelan tetrapyrgia are the oldest examples of this type, being of roughly the same date, derived perhaps from a Persian model.[162] The regularly shaped tetrapyrgion of Malathrea was initially dated to the late 4th or early 3rd century BC, but newer research has dated the construction to the latter half of the 3rd century BC.[163]

Sites classified as forts need not have been strictly military installations. Marie–Pierre Dausse has argued quite convincingly that small forts located in difficult terrain along ancient routes could be considered as safe havens for pastoralists and their flocks moving between their summer and winter pastures, or as refuges for the population living in unfortified settlements close by, instead of being regarded as rigid border installations with a military character. She based these claims on her study of the 14 fortified sites in the mountainous Tsoumerka region in southwestern Molossia, all with a circumference of less than 500 m and perched at altitudes of over 1000 m. All of the sites utilized the natural defenses of the terrain to a maximum extent, and the man-made fortifications mostly consist of only a single modest wall, built merely to block access along the weakest side to a summit surrounded by precipitous cliffs.[164] In two cases, Sirouno and Kalenji, an open settlement lies in the vicinity, even right below the *phrourion*.[165]

A *tower*, either situated within a surrounding enclosure or standing alone without an outer ward, is the third type of fortification. This type is represented by 13 sites, plus one uncertain case. A characteristic small fortification in the vicinity of Bouthroton and Phoinike is a stone tower 10–12 m square in the center of an enclosure around 37–40 m square. With four almost identical sites, Dobra, Çuka, Çumpora and Metoqi, the type is conspicuously frequent in the area.[166] All are located within 15 km of each other, and three excluding Dobra, were built within a 3.5 km radius on fairly low slopes near fertile plains.

Elsewhere in Epirus, there are three or four roughly comparable sites, Pyrgi, Vathy, and Vigla Keramitsas, while Psina[167] is uncertain. Both Hammond and Mouselimis described the last as a very long and narrow fort

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[161] Peschlow-Bindokat 2005, 12–16, plates 13–17, 25–27.

[162] ibid. 19.

[163] Çeka 1999, 64; Cabanes *et al.* 2008, 95–97; Giorgi & Bogdani 2012, 253–254.

[164] Dausse 2011a, 164–165. Of Dausse's 14 sites, only two, Kalenji and Sirouno/ Khouliarahdhes are included in Appendix II, as the others proved impossible to find.

[165] ibid. In Sirouno/ Khouliarahdes the settlement, known as Kambos, is just below the fortification. Kalenji has a small plateau to the west, which according to Dausse, has yielded finds which could be connected to a settlement. In Appendix II, Kalenji is number 51 and Sirouno is 53.

[166] Appendix II lists Dobra with number 96, Çuka with 112, Çumpora/Çuke with 113 and Metoqi with 114.

[167] Listed in Appendix II as number 27 for Pyrgi, 30 for Vathy, 71 for Vigla Keramitsas, Psina as 75.

but mentioned nothing of a tower in the fortifications; however, Nakas' account, accompanied by photos argued that the site was in fact a rectangular tower surrounded by the walls the others described.[168]

The dimensions of the central tower in these sites varied between 3.3 x 4.2 and 10 x 15 m. Unlike the group of sites near Bouthroton, all of these are located on the Greek side of the border, scattered around a large area and located on the upper parts of ridges, although not necessarily on the summit in all cases. Closely related sites, lone towers without accompanying enclosures, are represented by Ambelochori, Tsouka and Kastraki Sideris on the Greek side of the border and Guri I Qytetit on the Albanian side. All are located on the summits of hills or ridges with good views of the surrounding countryside. The dimensions of the towers, when mentioned, vary between 7 x 7 and 11 x 7 m.[169]

When looking for parallels, it became apparent that towers with and without surrounding enclosures were popular during the Classical and Hellenistic periods in nearby Lefkada but also in the Peloponnese and Attica, as well as in the islands of the Aegean. The nature of the towers, whether they were military installations, relay posts/watchtowers or civilian sites, fortified farmsteads, or tower dwellings, and the reason behind their construction in such quantities has been a matter of debate over the past decades.[170]

Susan P. Morris surveyed the 15 tower sites of Leucas (modern Lefkada) in 1991–2. She argued that none of these massive multi-storied towers had any military function; instead, all were to be interpreted as civilian installations, private residential structures, or non-military lookout posts guarding against the thefts of cash crops, especially grapes.[171] Later, she returned to the subject together with John K. Papadopoulos in a paper encompassing all of Greece (i.e., Lefkada, the Argolid, Chalkidiki and the Aegean Islands), arguing that such towers could have been used to house slaves working in the farming of cash crops, vines, or olives, quarrying or mining, but none had any military function.[172] In Acarnania, Ley had the opinion that farmsteads with towers were privately built and maintained fortifications, functioning as a retreat for their respective owners and people in the immediate vicinity, but not as a refuge for a larger population.[173]

On the other hand, Nankov preferred a military use for the towers in his study area of Opountian Lokris. Of the 17 sites studied, the two towers of Korseia and Palaiopyrgos were interpreted as observation posts watching over

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[168] Hammond 1967, 190-191; Mouselimis 2001, 73–74; Nakas 2016, 450–452.

[169] Nakas 2016, 450–452; Cabanes *et al.* 2008, 115. Sites in Appendix II, Ambelochori/Skloupo number 52, Tsouka number 54 and Guri I Qytetit number 140.

[170] Cf. Morris 2001; Morris and Papadopoulos 2005; Nankov 2009 to name a few.

[171] Morris 2001, 340–342, n. 74.

[172] Morris & Papadopoulos 2005, 167–204.

[173] Ley 2009a, 309.

the plain of Atalandi as well as the sea routes offshore. Both could also have served as part of a network of fire signal stations in the area.[174]

While elsewhere in the Greek world such Classical–Hellenistic towers are either quadrangular or round, in Epirus they are always rectangular or square. Morris' survey in the 1990s described some sites comparable to the Epirote towers. In the southeast corner of the island is the tower of Poros, 6.9 m square, built of pseudo-isodomic trapezoidal masonry with cuttings for dovetail clamps. Connected to the tower in the southwest is a large building built of ashlar masonry. She dated the complex to the 4th–3rd century BC.[175] On the east coast near Nidri are two independently standing two-roomed towers. The first is Neochori/Mavroneri, which is built of ashlar blocks with dovetail clamps measuring 6.15 by 6.24 m in size; the second is Helleniko, measuring 6.15 x 8.3 m and built of polygonal masonry with drafted corners that probably had a mudbrick superstructure.[176]

Rectangular towers with their ground floor divided into two rooms can also be found within the fortifications of Latmos, which had four such towers. The southwestern corner of the inner fort, the northern outer tower[177] and towers VII and XII of the city walls are all remarkably similar in appearance and design; their sizes varied between 5.9 x 9.7 m and 6.5 x 14.2 m, and their interior was divided into two rooms. The most interesting towers are the southwest tower of the inner citadel and the northern outer tower, 10.5 by 7.7 m and 11.7 by 7.3 m in extent, respectively, with walls 1.3–1.5 m thick and the interior divided into two rooms.[178]

The civilian tower of Helleniko on Lefkada and the two militaristic Latmian towers, especially the northern outer tower, are almost identical to the three Molossian towers of Psina, Tsouka, and Ambelochori.[179] While the last is obscured by being utilized in a chapel on site, the better preserved ones at Tsouka and Psina measured 10.5–11 x 7 m and were divided internally into two rooms approximately in the middle. The original height of the towers was thought to be around 10–11 m. Nakas considered them to be watch-posts overseeing different routes within Molossia; Tsouka would have controlled a route southward along the Arachthos, while Psina controlled the routes leading to Dodona from the north and west. As the visibility between the towers is limited due to topography, these towers could not have been used as beacons. All three were dated by Nakas to "sometime after 300 BC".[180]

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[174] Nankov 2009, 339–342.

[175] Morris 2001, 295–310, fig. 9. In describing the clamp cutting she uses the term swallow-tail clamp, derived from German Schwalbenschwanzklammer.

[176] Morris 2001, 314–317.

[177] Nördliche Außenturm, Peschlow-Bindokat 2005, 17.

[178] ibid. 9–18.

[179] Nakas 2016, 446–455. In Appendix II, Psina is number 75, Tsouka 54 and Ambelochori 52.

[180] Nakas 2016, 452-454

Based on the comparanda, I would consider the four densely located and practically identical sites around Bouthroton, as well as Pyrgi in the Margariti plateau to fulfill the role of a fortified farm. The dating of the sites, when mentioned, fluctuates between the late 4th and the 2nd centuries BC.[181] All are located in a low-lying, fertile farming environment that is well suited for cultivating cash crops such as olive or vines. While not necessarily slave-pens, as Morris and Papadopoulos have suggested, such towers could well have acted as a safe storage and living areas for local farmers, especially following the rise of Illyrian piracy. For the higher-lying towers, I prefer a more militaristic view, regarding them as lookouts or beacon/relay stations, *phryktoria,* as argued convincingly by Nakas. I would thus regard Vathy, Vigla Keramitsas, Psina, Tsouka, Ambelochori, Kastraki Sideris and Guri I Qytetit as being phryktoria built around the time of Pyrrhos.

The peculiar tower of Vagalat is located near the summit of a ridge, high above the gorge of the River Pavla, approximately 8.5 km east of Butrint.[182] The tower sits on the north slope of the ridge, slightly below the summit. The site is classified as a tower, however, it is not comparable with any other site in Epirus. It consists of a rectangular tower, 6.5 m wide by 9.5 deep on the downhill side, above which is a straight stretch of compartmented curtain ascending toward the summit. A staircase is built on the eastern side of the curtain, close to the tower. The tower has a chamber on the wall walk level, the foundation is solid, but there is no indication as to whether there were crosswalls in the socle. The chamber side walls are 1.2 m thick and pierced by one embrasure per side. The masonry is neat quarry faced pseudo-isodomic ashlar and trapezoidal.[183] The tower is clearly built for surveillance purposes, being a *phryktorion* with unobstructed views toward the east and also controlling the gorge of the Pavla to its south. As the tower has never been excavated, its dating is not clear; in the literature, it is variously dated as being a 4th–3rd century BC structure or just ”Hellenistic”.[184] If, on the other hand, it was built as a watchpost of the local tribe, the Prasaibians, during their short-lived independence as Karaiskaj argued, its dating would fall to the latter half of the 2nd century BC.[185]

The fourth fortification type, *rubble enclosure,* is an enigmatic type of site. They are usually roughly oval in shape and devoid of towers or gates. There are six examples of such, and one uncertain case, of which Faskomilia and

[181] Dobra dated to the end of the 4th century BC although the finds are dated to the 3rd and 2nd centuries BC, Cumpora to the 3rd–2nd century BC and Metoqi to the end of the 4th or early 3rd centuries BC according to Giorgi & Bogdani 2012, 167–169, 173–175, 193–194. The dates for Pyrgi and Çuka are uncertain, but are likely comparable with the aforementioned.

[182] Vagalat, number 90 in Appendix II.

[183] Hammond 1967, 96, plan 21, 17, plate Vc & VIIb; Cabanes *et al.* 2008, 94; Giorgi & Bogdani 2012, 194–197, figs. 55–58.

[184] IV-III BC according to Ceka 1999, 64; Giorgi & Bogdani 2012, 197 only classified it as Hellenistic.

[185] Karaiskaj 2009, 50.

Phrosini are on the Greek side of the border, while the majority of the reported sites, Qyteza, Pepeli, Karosi and Pirgu are on the Albanian side.[186] In 2005, I visited Phrosini in the Souli Valley, built of small, slab-like, uncut stones laid flat. The walls were a couple of meters wide, but no other distinctive traces could be seen (Fig. 6). Accordingly, the dating of such sites is vague at best. The best dated example is Karosi, dated to the early Iron Age, 9th century BC, while two others, Qyteza and Faskomilia are most likely Medieval, from the 13–14th century AD.[187] Many, such as Phrosini could even be modern, perhaps 18th–19th century AD, as there is little to date them with.

Figure 6 Phrosini. The oval rubble enceinte in the Souli Valley, the dating of which is unclear. Photo M. Suha 2005.

The final fortification type is the *Long Walls,* with only one example, the one-kilometer long Dema Wall across the Hexamili Peninsula 7 km to the north of Bouthroton.[188] The massive wall is ca. 7 m thick and still up to 3.6 m high in places. At the seaside end of the wall there is a bastion 9.6 m deep, built with massive stone facings 2.8 m thick surrounding a rubble fill 5 m thick. The masonry is large ashlar with tooled faces, comparable with the Archaic masonry of Ambrakia. Peculiarly, there are very small clamp holes between the blocks, only 5 cm long and 2.5 cm wide, although their shape is not described. The wall has been dated to the 5th century BC.[189]

[186] In Appendix II, Faskomilia/Gourgara is number 44, Frosini 48, Qyteza/Dishati 88, Pepeli 120, Karosi/Qeparoi 130 and Pirgu/Katafiqi 132.

[187] Dating of Karosi and Qyteza in Giorgi & Bogdani 2012, 201–202, 241–242; Faskomilia by Mouselimis 2001, 58; Kastrologos: Castles of Greece.

[188] Number 111 in Appendix II.

[189] Hammond 1967, 99; Cabanes *et al.* 2008, 82; Giorgi & Bogdani 2012, 248–249.

3.2 COMPONENTS OF FORTIFICATIONS: CURTAIN WALLS

Curtain walls are the actual fortification walls around a site, but also the stretches of walls located in between the other component parts of a fortification (i.e., towers, bastions, and openings). Accordingly, in Greek the curtains were called "between towers", *μεταπύργια* or *μεσοπύργια*.[190] A typical Greek fortification wall consists of an inner and outer facing built of large, well cut blocks, between which is a filling of packed soil and small stones.

On top of the curtain walls were the narrow *breastworks or parapet* along the outer edge of the wall, which served to protect the *parodos*, the wall-walk where the sentries patrolled. The breastworks were either *crenellated*, consisting of higher *merlons* alternating with lower *embrasures*, or had a continuous high, level-topped screen wall, *epalxis,* pierced by window-like openings and/or arrow slits at intervals. As there are no preserved examples of either type of breastworks in Epirote sites, except in Labovë,[191] where the type is not stated, the type is mostly an educated guess. Generally speaking, screenwalls became more popular following the development of catapult artillery in the wake of the Macedonian conquests (i.e., late 4th century BC).[192]

The curtain thickness most commonly varies between 2.5 to 3.5 m and the height between 2 and 6–7 m, with the parapet or screenwall on top having added another 2-2.5 m to the total height.[193]

3.2.1 MUDBRICK SUPERSTRUCTURE ON A STONE PLINTH

Curtains, like towers and bastions, could be built entirely of stone, from the bottom of the foundations to the top of the parapet. Alternatively, only the foundation and the lower part of the curtain could be built of stone, while the upper part was built of sun-dried mud brick. That the preserved stone foundations could once have been topped by a mudbrick superstructure that is now lost, is a distinct possibility when the stone foundation is level-topped with a constant elevation of some 1.5 to 3 m.[194] The unfired bricks, usually some 40–50 cm square and 8 cm high, were laid in courses utilizing a mud

[190] Lawrence 1979, 343.

[191] Labovë, number 139 in Appendix II.

[192] Adam 1982, 37–38.

[193] Lawrence 1979, 344–345; Ley 2009a, 63, 69, 76, 92, 100, 176; Ley 2009b, 19, 47–49, 119, 145, 149, figs. 37–43, 157, according to whom the lowest curtains in Acarnania were only 1.7–2.8 m high, topped by a parapet 1.8 m high at the minimum.

[194] Maher 2012, 64; According to Lawrence 1979, 212 the upper reaches of the plinth could be located "beyond a man's reach"; Winter 1971, 71.

mortar of similar clay as the bricks themselves, both then solidifying into a single mass upon drying. The mudbrick was then covered by a layer of water-proof lime plaster, which would have protected the bricks from the rainwater and also absorbed moisture from within the core. To a similar end, the wall-walks on the top would have been paved, either with tiles, thin stone slabs, or packed soil and stone chips.[195]

Elsewhere in Greece, the frequency of mudbrick fortifications varies. In his dissertation, Maher argued that all of the large 17 Classical–Hellenistic enceintes in Arkadia he conducted research on were built in this manner. The opposite conclusion was reached by Ley on the city circuits of Acarnania, according to whom only one of the local sites had *any* section built of mudbrick: an extension of the city wall of Alyzia traversing a valley floor had towers with hollow ground stories topped with a mudbrick superstructure. Ley argued that the hollow structure of the lower chamber could have helped dry the mudbrick. She explained the lack of mudbrick walls in Acarnania was due to the abundance of skillful local masons and their strong tradition of stone masonry, as well as economy, as most of the Acarnanian fortifications were built of stone material obtained right on the spot, which would have saved transportation costs. Furthermore, stone was a logical choice of building material in the mountainous environment where finding suitable clay for the mudbricks would have been more problematic. Climatic conditions in the area are likewise not ideal for sundried mudbrick, as Acarnania is rainier than most of Greece. [196]

However, despite Epirus being the rainiest region in the whole of Greece, even surpassing Acarnania, sun-dried mudbricks seem to have been used fairly frequently in local fortifications. Eight sites in all, three of which are large city circuits, show strong evidence for the existence of mudbrick walls on a stone plinth: Ambrakia in the south along the Arachthos, Gitana slightly more to the north along the Kalamas, and Saraginisht in the north of the area. Atypically for such sites, Saraginisht is located high on the hills, well above the River Drino.[197] Representing smaller sites with a mudbrick superstructure are the forts of Chanopoulo, Nekyomanteion, Pyrgos Ragiou and Lygia A–C, all located on the Greek side of the border, and Kalaja e Kaninës on the other. Of these, Nekyomanteion undoubtedly had a mudbrick superstructure that was burned and vitrified on the spot, while in Kalaja e Kaninës, some unburnt bricks were still in such good condition that even their size, 35 x 33 x 7 cm, could be recorded.[198] Excluding the high-lying sites of Saraginisht and Kalaja e Kaninës located at ca. 320–360 m a.s.l., all of the enceintes were at much

[195] Maher 2012, 65; Lawrence 1979, 211.

[196] Ley 2009a, 53, 261, 285: Ley 2009b, 21, figs. 14–17.

[197] Ambrakia is number 10, Gitana 63 and Saraginisht/Antigonea 137 in Appendix II. Gitana will be examined in detail in Chapter 4.2.

[198] Chanopoulo, number 11, Nekyomanteion 21, Pyrgos Ragiou 65 and Kalaja e Kaninës number 151 in Appendix II. Pyrgos Ragiou will be examined in detail in Chapter 4.2.

lower altitudes of 20–110 m a.s.l., close to water and clay bearing plains. Thus, the supply of both stone for the foundations and clay for mudbricks would have been available in the vicinity.

Four cases are uncertain but likely candidates for mudbrick superstructures. The level-topped triple walls of Kastri Acheronta are located at altitudes of 20–85 m a.s.l., immediately above the Acheron, and, in antiquity, in the vicinity of a body of water known as the Acherousian Lake. Likewise, at Masklinitsa, an obscure enceinte is located at ca. 100 m a.s.l. on a gently sloping hill in the middle of the Kalamas Delta, between two forks of the river. For both, mudbrick seems to be a very likely material, as the material could have been procured from their immediate surroundings. The utilization of mudbrick is also very likely in the city wall of Klos and the poorly preserved settlement wall of Hundësova.[199]

The presence of a mudbrick superstructure is not particularly helpful in establishing the dating of a site, as such walls can be found in Greek fortifications of all periods. A mudbrick superstructure was popular until least the first half of the 4th century BC, after which all-stone fortifications became ever more common. However, stretches of mudbrick walls still appear even in later Hellenistic fortifications.[200]

3.2.2 COMPARTMENTED AND ABBREVIATED CURTAINS

To economize on the use of material, most of the blocks in a wall were laid lengthwise, along the course of the wall, as stretchers. Occasional blocks could be laid perpendicularly, as headers, to penetrate the fill, in order to anchor the facings to the core.

When headers from both faces meet in the filling, they form *compartment walls*. Sometimes the compartments in the walls were built at irregular distances, but a more common way was to build them in a more regular pattern with reciprocal distances of ca. 3–6 m (i.e., 10–20 feet). Compartmenting is especially useful when the wall trace traverses steep gradients, in order to brace the filling. They also served to divide the wall into separate sections, localizing any damage to the walls caused by rams or catapults.[201] In curtains built of trapezoidal and ashlar masonry, such compartment walls are visible in the facing as vertical *masonry chains*.[202] Polygonal walls can also be

[199] Kastri Acheronta/Pandosia number 20, Masklinitsa 67, Hundësova 128 and Klos/Nikaia number 153 in Appendix II.

[200] Cf. Mantinea, the Long Walls of Athens etc. Winter 1971, 69–77; Lawrence 1979, 208–214; Adam 1982, 19–20; Brasse & Müth 2016, 78.

[201] Lawrence 1979, 214–218.

[202] Karlsson 1992, 68–86. Masonry chain is a term developed by Karlsson. According to him, this is what Vitruvius meant by "*emplekton walls*", meaning "plaited in". The pattern of masonry chains in ashlar and trapezoidal walls appear to be interwoven in the wall.

compartmented, although the masonry chains are impossible to discern in the facings due to the random nature of the block shapes (Fig. 7).

Figure 7 Kassope. Three compartment walls visible in the western curtain wall built of polygonal masonry. View towards the south. Photo M. Suha 2005.

In Nankov's dissertation he described two cases of compartmented curtain walls in Opountian Lokris, at Kastraki and Korseia. In addition to these, three sites, Opous, Halai and Larymna, have stretches of both compartmented and abbreviated curtains. He dated all of these sites to the last quarter of the 4th century BC at the earliest.[203]

Closer to Epirus, Ley described six Acarnanian enceintes with stretches of compartmented curtains, at Alyzia, Argos Amphilochikon, Limnaia, Palaiomanina, Palairos and Stratos, all of which she dated to between the 420s and the mid–3rd century BC. She concluded that compartment walls were a common feature in northwestern Greece by the latter half of the 5th century BC.[204]

Compartmented curtains are common in Epirus (Table 1). Thirty-one sites have clear indications of such, 10 of which are built either wholly or partly of polygonal masonry. A further two sites, Kastri Rizovouni and Bouthroton are considered to be uncertain but likely, due to the thick vegetation covering the

[203] Nankov 2009, 424–429, 464–467, table 3.1.

[204] Alyzia, phase III with compartmented curtains dated to the latter half of the 4th century, the whole circuit of Argos Amphilochikon most likely to the third quarter of the 5th century, phase I walls in Limnaia, dated to between the mid–5th and mid–4th centuries, II phase walls at Palaiomanina, dated to after the mid–4th century, in Palairos phase IIIa dated to the last decades of the 4th or the first decades of the 3rd century, and in all fortification phases of Stratos, dated to between the third quarter of the 5th century and the mid-3rd centuries BC. Ley 2009a, 53–54, 60–61, 79–85, 94–95, 126–127, 141, 158–167, 259; Ley 2009b, 17, 35, 113, 145, 248, 351, figs. 103–104, 350-351, 460–470.

curtains. Indeed, there may be many more since so many sites are covered by dense vegetation, preventing the observation of the curtains.[205]

Table 1. *Compartmented curtains in Epirus. If known, the distances of the compartment walls, in meters, are listed.*

Number, Name of Site	Compartment wall distances	Masonry
2. *Argos Amphilochikon*	3 m	Ashlar, trapezoidal
10. *Ambrakia*		Ashlar
13. Paliorophoron/ *Elatreia*		Polygonal
14. *Kassope*	2.4–2.8 m	Polygonal
20.Kastri Acheronta/ *Pandosia*	3 m	Trapezoidal, polygonal
22. Ammotopos/ *Orraon*		Ashlar
42. Dymokastro/ *Elina*	2.8–3.2 m	Polygonal
47. *Elea*	ca. 3 m	Polygonal
56. *Dodona*	2.8–3.4 m	Trapezoidal
62. Doliani/ *Phanote*		Trapezoidal
63. *Gitana*	1.9–4 m	Polygonal, ashlar slabs
65. Pyrgos Ragiou	1.5–2.9 m	Trapezoidal
77. Kastritsa/ *Tekmon*	ca. 3 m	Polygonal
80. Megalo Gardiki/ *Passaron*	2.1–2.9 m	Polygonal
88. Qyteza	irregular	Rubble (!!)
89. Aetos/ Çuka e Aitoit	3–4 m	Polygonal, trapezoidal
90. Malathrea/ Malahuna		Trapezoidal
91. Vagalat		Trapezoidal
105. Selo/ Kalaja e Selose	3 m	Ashlar, trapezoidal
106. Lidiza/ Ripësi		Trapezoidal, polygonal
109. Malçan		Ashlar, trapezoidal
111. Dema Wall	3–4 m	Ashlar
125. Melan/ Melanit Tekke		Ashlar (phase II)

[205] In many cases the sources are silent about the presence or absence of compartment walls or their intervals.

129. Kalaja e Borshit/ *Panormus*	2.5 m	Trapezoidal
137. Saraginisht/ *Antigonea*	2.7–3.1 m	Ashlar
143. Limar	2.5–3 m	Ashlar/trapezoidal
144. Lekël		Ashlar
146. Matohasanaj	2.9 m	Ashlar (phase III)
149. Mavrovë/ *Olympe*		Ashlar
151. Kalaja e Kaninës	2.5 m	Ashlar
152. Gradisht/ *Byllis*	5 m	Trapezoidal

As seen in Table 1, in 20 cases the reciprocal distances of the crosswalls were mentioned in the literature, or were possible to measure. The rubble enceinte of Qyteza is only described as having "irregularly located crosswalls". In Gitana and Pyrgos Ragiou, the crosswalls are occasionally located at varying distances of 1.5–4 m; however, the majority are located at distances of 2.6–3.2 m, which is comparable to the 2.8–3.4 m at Dodona.[206] The mean distance of crosswalls at all sites is around 3 m, or 10 feet. Only Gradisht/Byllis stands out by having compartment walls at exceptionally long intervals of 5 m.

The presence of compartment walls is not very helpful in dating Epirote walls, as these can be found in Ambrakian walls dated to the late 6th or early 5th century BC; on the other hand, they are also present in the late curtains of Saraginisht/Antigonea, which have been dated to 297/296 BC.

Abbreviated curtain is a term invented by Lars Karlsson in his dissertation to describe what is essentially a compartmented curtain lacking an inner facing. According to Karlsson the abbreviated curtain in Gela, Sicily, consists of an outer facing of single block thickness backed by perpendicular spur walls projecting ca. 2.2 m from the inner face of the curtain at intervals of 2.6–2.9 m. He dated the Geloan abbreviated curtains to between 311 and 282/280 BC. Other such curtains have been identified in Athens, including the "White Poros Wall" on the Pnyx, and in the walls of Rhodes that were built following the earthquake of 229 BC.[207] He returned to the subject in 1996 with a more detailed analysis of the White Poros Wall. Unlike the wall at Gela, it has an outer facing that is 2 m thick and built of ashlars arranged in alternating courses. On a single masonry course, one side of the wall consists of only headers, backed by a row of stretchers; in another course, the arrangement is reversed. The wall proper is backed by rather short, squarish spurs projecting only 1.35 m at intervals of 4.6 m. According to Karlsson such a structure was employed in city walls during the period between the reigns of Demetrios Poliorketes and Antiochos III (i.e., ca. 294–187 BC). Karlsson distinguished

[206] Gitana, Pyrgos Ragiou and Dodona will be examined in detail in Chapters 4.1–4.2.

[207] Karlsson 1992, 81–82.

two groups: the early group, represented by the Geloan curtain with the outer facing one block thick and rather long spurs placed at close intervals; and the later group, represented by the White Poros Wall with a thicker double block outer facing backed by short, squarish buttresses located at longer intervals.[208]

The term was acknowledged by Nankov, in whose dissertation on Opountian Lokris covering 18 sites, he listed three sites with abbreviated curtains: Alope, Kynos and Palaiokastritsa Livanaton. Three enceintes, Opous, Halai and Larymna, had both abbreviated and compartmented stretches in the walls. All were dated to the last quarter of the 4th century BC at the earliest.[209]

How would it have been possible for the sentries to patrol a stretch of abbreviated curtain with its narrow outer wall, as the parapet on top would obviously have used at least half a meter of the narrow width to begin with? One solution is that the spaces between the spur walls would have been covered with *ikria,* wooden planking or scaffolding that would have widened the wall-walk considerably. The planks could also have been removed if the need arose.

Alternatively, the spur walls could have supported a series of masonry arches, resulting in a *galleried curtain.* In such, the spur walls would have supported both wooden floors high up along the curtain, yet below the wall-walk level, as well as a row of arches carrying the normal wall walk above. Thus the wall walk would have been on the upper floor level, open to the elements and protected only by the parapet. Below that, the gallery floor would have been protected from the elements and thus could have housed a series of small catapults.[210]

In Epirus, there is one possible instance of Karlsson's early type of abbreviated curtain, at Argos Amphilochikon.[211] The site has been badly destroyed; only the eastern part of the fortifications is standing to a maximum height of a couple of courses. According to Ley, the enceinte is built of flysch ashlar blocks. While she describes the north curtain as a normal 2.8 m thick wall compartmented regularly at 3 m intervals, the east curtain is different. Here, the curtain is likewise 2.8 m thick, but seems to be lacking the inner facing. For this wall, Ley uses the term "Aussteifungsmauer", but seems to consider it as a normal, compartmented wall perhaps lacking one face, which has disappeared over the past millennia. She also describes and provides images of the curtain, but does not raise the issue at all in the text (i.e., does not regard the structure as meaningful or standing out from the normal compartment walls). From Ley's fig. 29, it is possible to deduce that its total thickness of 2.8 m consists of a single block wall perhaps 1.4 m thick on the downhill side, and backed on the uphill side by buttresses ca. 1 m wide by 1.4

[208] Karlsson 1996, 88–92.

[209] Nankov 2009, table 3.1, 429, 464–467.

[210] Winter 1971, 142–146; Lawrence 1979, 364–365, 370–374, fig. 85.

[211] Number 2 in Appendix II.

m deep at 3 m intervals.[212] Ley dated the enceinte of Argos Amphilochikon on the basis of the closely spaced towers to an early period, to the latter half of the 5th to the first half of the 4th century BC. She noted that the Ambrakians fought several times in the vicinity of the settlement in 430–426 BC but failed to take it, suggesting that the defenses must have been in existence at the time.[213]

There is an exactly matching structure for this in the southern acropolis wall of Panopeus in Phokis. It was briefly described by Winter as a "possible terrace-wall fortification with internal buttressing", along with a small and obscure black-and white photo of the feature. According to Winter, the fortifications of Panopeus were most likely built soon after 338 BC.[214] I visited the site in 2013 and incidentally took photos of the same walls, not aware of Winter's visit (Fig. 8). The curtain at Panopeus consists of an outer facing of a single block thickness on the outer, downhill side, backed uphill by rather long and narrow buttresses and no inner facing.

Figure 8 Panopeus. Winter's "terrace wall fortification". Looking toward southwest. Photo M. Suha 2013.

One case of Karlsson's later type of abbreviated curtain can also be found. In Bouthroton, a circa 20 m long stretch of abbreviated curtain is visible just to the west of the Asklepeion Gate (Fig. 9). It consists of a two faced curtain wall, 2.45 m thick and backed by very small squarish buttresses measuring 0.82 by 0.86 m, at 3 m intervals.[215] Previously, it had been interpreted as a late–3rd century modification or a repair of the original late 4th century BC city wall. This has since changed, and the whole Hellenistic lower town enceinte

[212] Ley 2009b, 34–35, fig. 29.

[213] Ley 2009a, 60–61; Ley 2009b, 35–39, maps 4a & 4b, figs. 28–29.

[214] Winter 1971, 145–146, fig 120.

[215] Karaiskaj 2009, 36.

including this sector is now regarded as having been built in one and the same phase in the late–3rd century BC.[216]

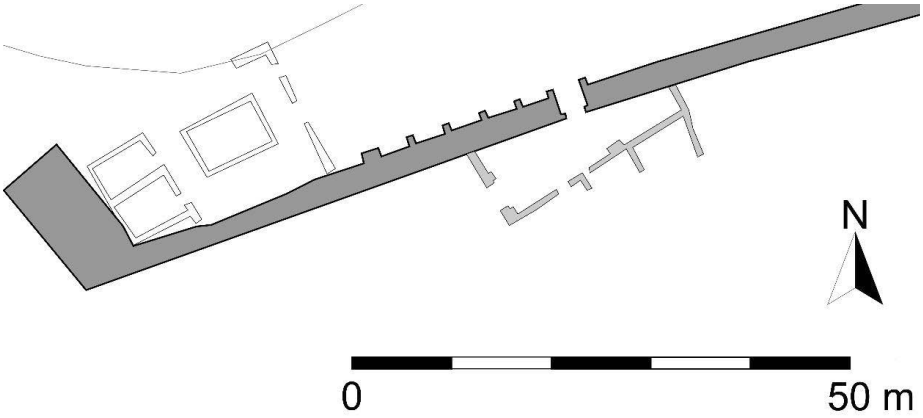

Figure 9 Bouthroton, the lower town wall in the vicinity of the Asclepeion Gate. A stretch of the late type abbreviated curtain is visible to the left of the opening. Illustration by M. Suha 2020 after Greenslade *et al.* 2013, figure 4.8.

In neither Epirote case does a galleried curtain seem likely. The early type abbreviated curtain at Argos Amphilochikon is a match for Winter's "terrace-wall fortification" at Panopeus. The wall in Bouthroton seems an economical and perhaps slightly faster way of erecting a fortification wall with a slightly thinner outer facing backed by small buttresses, than building a normal thick curtain.

3.2.3 JOGS AND INDENTED TRACE

The curtain of an enceinte could be built in a saw–tooth trace, with offsets or indentations known as *jogs* to provide *enfilading* or flanking fire. Jogs are abrupt turns of the wall, within which the projecting sections, *flanks*, jut out, preferably at right angles, from the *face,* the main direction of the curtain. The indentations in the wall trace could also be irregular, wide angled (i.e., flanks and faces not at right angles to one another, but at a much wider angle). If there are several successive jogs at very wide angles to one another, the resulting undulating wall trace is called a "meandering trace".

The use of jogs was the choice of the builders, especially in uneven, rocky terrain because the zigzagging of the wall would have braced the structure against a descending slope. The number of individual jogs varies from single to several, dictated by the topography on site. When a number of right-angle

[216] Cabanes *et al.* 2008, 75–76; Hodges 2013, 7–10.

jogs are built in close succession in a same stretch of wall, the feature is known as an *indented trace*.[217]

The earliest examples of indented trace are Archaic, but they can frequently be found even in late Hellenistic enceintes. In some cases, such as in the mid–4th century BC city wall of Priene in western Asia Minor, the indented trace developed into a highly regular sawtooth trace with straight faces of even lengths, protected by fairly shallow flanks of uniform size.[218] A fine example of a wall utilizing an indented trace is the northern curtain between Postern 4 and Gate B in Gortys, Arkadia. There, the indented trace covers a distance of ca. 300 m, consisting of some 20 successive jogs, each 10.5–12 m long and guarded by flanks projecting 2–2.5 m. The original circuit is thought to be an early 4th century product, repaired and remodeled during the 3rd century BC. The stretch of regular indented trace is regarded as belonging to the later phase.[219] Another example is the fortress of Samikon, located in the Peloponnese, in Triphylia, some 1.5 km from the western coast. In the southeastern corner of the enceinte, where the wall crosses a depression, is a stretch of walling with four jogs with faces 10–30 m long.[220] The fortress was most likely built in the first half of the 4th century BC.[221]

The descriptions of 42 Epirote sites mention one or several successive jogs in an enceinte, although in most cases the dimensions of the jogs are not mentioned. Walls with a "meandering trace" are not found in Epirus. The jogs at nine sites, examined in Paper V, (Kassope, Kastri Rizovouni, Kioteza, Agios Donatos, Dodona, Doliani, Gitana, Pyrgos Ragiou and Megalo Gardiki) will not be discussed here, as they are presented in Chapters 4.1–4.3.[222]

In six enceintes, (Gitana, Lygia B, Doliani, Megalo Gardiki, Çuka e Aitoit and Paleomanastër), there are stretches classifiable as an indented trace, with numerous jogs in close succession.[223] In Lygia B, the northern tip of the central peninsula is fortified by curtains 3 m thick featuring four successive jogs, each projecting 2.6–2.7m, guarding faces ca. 32m long. According to Spandodimos, none of the fortifications of Lygia A–C can be dated earlier than the early 4th century BC.[224] Surrounding the summit of a very steep-sided hill, the circuit of Çuka e Aitoit has no towers. The whole southern curtain consists of eight very

[217] Winter 1971, 102, 109, 122; Lawrence 1979, 349; Müth & Ruppe 2016, 234–237.

[218] Frederiksen 2011, 91 f.; Müth & Ruppe 2016, 234–236.

[219] Martin 1947, 98; Maher 2012, 467; Müth & Ruppe 236–237.

[220] Cf. the jogs at the acropolis circuit of Dholiani, to be presented in detail in Chapter 4.2.

[221] Richter 2016, 328–331.

[222] In Appendix II, Kassope is number 14, Kastri Rizovouni 21, Kioteza 37, Agios Donatos 38, Dodona 56, Doliani 62, Gitana 63, Pyrgos Ragiou 65 and Megalo Gardiki 80.

[223] In Appendix II, Gitana is number 63, Lygia/Lygaria A–C 66, Çuka e Aitoit 89 and Paleomanastër 98.

[224] Spanodimos 2019, 251–264.

irregular jogs, with flanks 2.15–3 m deep and faces ca. 30–80 m long.[225] Cabanes *et al.* distinguished two phases of the site, the first being an unfortifed settlement in the 5th to 4th centuries, subsequently fortified in the second phase, during the 4th–3rd centuries BC.[226] In Paleomanastër, the eastern corner of the enceinte has eight jogs, and the site has no towers. Cabanes *et al.* dated the site to the first half of the 4th century BC.[227]

Some right-angled but very shallow offsets, projecting around 1 m or less, are not jogs, rather just bracing for the wall against a slope, or where the wall trace turns. Such offsets are observable in Ambrakia, Gitana, and Doliani.[228]

3.3 COMPONENTS OF FORTIFICATIONS: GATES AND POSTERNS

A *gate* is a large opening through the wall, usually some 2–4 m wide, to allow the entry of fully-laden pack animals and carts. In addition to these, smaller auxiliary openings known as *posterns* or *sally-ports,* usually 1–2 m wide, could be built at different locations along the enceinte. These were used in times of crisis to enable sallies of the defenders, but would obviously ease the daily access of the inhabitants during peaceful circumstances. Both openings are classified either as axial *frontal* or overlapping *tangential* according to their design. Frontal is a simple opening that is perpendicular to the wall trace, either completely unflanked, guarded by a single tower on either side of the opening, or by a pair of towers, one on each side of the opening. A tangential opening consists of a gate opening through a flank of a jog that is located at the end of an alleyway formed by the curtain wall on the inside and a parallel, external wall arm.[229]

Overlap gates can already be found in Mycenae, with the Lion Gate being a very imposing early example of such. Such gates were considered the strongest type, as the gate is located at the end of an alley flanked by walls offering ample firing positions for the defenders, enabling point-blank fire to the sides and backs of enemies approaching the gate. In more elaborate cases the external wall could have a tower at its outermost tip, while another tower could be placed at the beginning of the alleyway leading to the gate, enabling the defenders to shoot at the backs of the assailants. In such cases the route leading to the gate would have several tight turns in succession, the route being

[225] The face measurements were not stated directly, but were procured from the map of the enceinte, fig. 3 in Bogdani 2006. The structure bears a close resemblance the south curtain of Megalo Gardiki/Passaron, to be presented in detail in Chapter 4.2.

[226] Bogdani 2006, 57; Cabanes *et al.* 2008, 88-91.

[227] Cabanes *et al.* 2008, 98-99; Giorgi & Bogdani 2012, 190-192.

[228] Doliani will be presented in detail in Chapter 4.1, and Gitana in Chapter 4.2.

[229] Winter 1971, 208, 215, 222, 234–235; Lawrence 1979, 303.

L- or even Z-shaped.[230] Good examples of elaborate overlap gates can be seen in the circuit of Mantinea, with nine of the ten gates being of this variety with accompanying towers and exceptionally large proportions. The circuit has been dated to the early 4th century.[231] However, such winding approaches would have slowed and made the peace-time traffic to and from the gate overly complicated.

A frontal gate is much simpler in design, being essentially a straight route through the circuit wall. In the Greek world, unflanked frontal gates can be found in enceintes of all periods, and occasional early examples of such flanked by a single tower on either side, or even by a pair of towers can be also found. However, gates symmetrically flanked by a pair of towers only started to become more common over the course of the 5th and 4th centuries BC.[232]

A refinement of the frontal type of gate is called a *forecourt gate*. Therein the gate is located at the rear of the forecourt, a large recess flanked by a pair of towers or bastions at the external edge, the wall trace proper, as exemplified by the monumental Dipylon Gate at Athens. The forecourt need not have been rectangular in shape; the side walls could splay inwards like in the Tripylon adjacent to Castle Euryalos in Syracuse, Sicily, or be curved like Gate 10 at Mantinea. A slight variation to the type is the *courtyard gate,* where a wide courtyard opens up behind two outer towers located at a short distance from each other. The outer opening leading to the courtyard never had any gates; the enemy would have been lured into an open killing field upon trying to reach the gate at the inside wall. The Arkadian Gate at Messene, dated to the 360s BC, with its large round courtyard is a good example of such a type.[233]

As the complex design of elaborate overlap gates slowed and hindered peace-time traffic, they were gradually superseded in primary entrances from the later 4th century BC onward by simpler forecourt and courtyard gates, enabling much smoother traffic flow. Such courts could reach monumental proportions in the great Hellenistic enceintes.[234]

The range of different types of gates and posterns in Epirus is presented in Table 2 below.[235] Looking at the table, it quickly becomes apparent that in Epirote sites the forecourt type is the rarest with only two examples, while no courtyard gates are present.

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[230] Maher 2012, 90-94.

[231] The tenth is a forecourt gate with a semicircular court. Lawrence 1979, 332-333; Maher 2012, 160–163.

[232] 5th century BC, according to Lawrence 1979, 316; latter half of 4th century, according to McNicoll 1997, 7.

[233] Lawrence 1979, 316–319; Maher 2012, 90.

[234] Winter 1971, 223–228; Maher 2012, 94.

[235] Note, however, that the information on the table is based mostly on the source literature, where in many cases the layout of the openings is not stated. This is obviously not the case with the sites I have studied personally.

Most Epirote tangential gates are simple in design, without accompanying towers and frequently even lacking the flanking wall, so that the opening merely pierces the flank of a jog. One of the rare cases of a complex tangential gate with accompanying towers is the main gate of Klos/Nikaia.

Concentrated in the north of the study area there were six special cases mentioned in the source literature as being "gate-towers". This type is apparently a further refinement of an overlap gate, within which the external end of the alleyway leading up to the gate would have been covered by vaulting, on top of which there would have been a roofed tower chamber. One can be found in Ploçe/Amantia,[236] four in Gradisht/Byllis and one at Klos/Nikaia. In addition, in the description of the walls of Phoinike, Cabanes *et al.* claim that the gate near the south-eastern corner of the enceinte would also have been a "gate-tower". However, this gate is frontal, located between two large bastions 7.1 m wide by 8 m deep. According to Cabanes *et al.* the gate corridor, 3.5 m wide, would have been covered by arches supporting a tower chamber above.[237]

The gates and posterns of Kassope, Nekyomanteion, Kastri Rizovouni, Elea, Dodona, Doliani, Kastritsa, and Bouthroton were studied in detail in Paper IV, and will thus only be presented in Chapters 4.1–4.3.

Table 2. *Types of gates and posterns in Epirote sites.*

Site number, name	Types of openings. P for postern, G for gate, GT for «gate-tower»				
	Axial, unflanked	Axial, flanked on one side, (Seen from the outside).	Axial, flanked on both sides	Tangential	Forecourt
2. Argos Amphilochikon	1 G (?)	1 G (R), 1 P (L)			
10. Ambrakia[238]				1 P (blocked)	
13. Paliorophoron			1 G		
14. Kassope	2 G			1 P	
18. Nekyomanteion	1 P	1 P (R)			
19. Xylokastro/Ephyra		1 G (R)			
20. Kastri Acherontas/Pandosia			1 G	2 G	
21. Kastri Rizovouni	1 P	3 P (R), 1 G (R)		2 G	
22. Ammotopos		1 G (L)	1 G	1 G	1 G
37. Kioteza		1 P (L)			
38. Agios Donatos				2 G	

[236] Gate 6, with a reconstructed arch.

[237] Cabanes *et al.* 2008, 102-103. He compares this with the gates of Byllis and Amantia mentioned above, but as described, they are different in layout. However, cf. the east gate of Dodona described in Chapter 4.3.

[238] Despite being a huge enceinte, the excavations have revealed only one postern blocked at some later stage.

42. Dymokastro/Elina		1 G (L)		1 G	
43. Polyneri	1 G	1 G (R)[239]			
42. Paramyhtia Castle	1 P	1 G			
47. Elea	1 G	2 P (R)			
49. Kalogeritsa	1 G?	?		1 G	
56. Dodona	1 P		1 G	1 G	
57. Vereniki				1 G	
62. Doliani	3 P, 1 G		1 G	1 P, 1 G	
63. Gitana	3 P	1 P (L), 1 P (R), 1 G (L), 1 G (R)[240], 2 P (R)	1 G		1 G
65. Pyrgos Ragiou		1 P (R)		1 G	
66. Lygia A-C			1 G		
70. Pente Ekklesies			1 G		
72. Raveni				1 G	
74. Kato Zalongo		1 G (L)			
77. Kastritsa	1 P	1 P (R), 1 G (L)		3 G	
80. Megalo Gardiki/Passaron		1 G (R), 1 P (L)			
84. Despotikon				1 P	
85. Gardiki Filiaton		1 P (L)			
89. Çuka e Aitoit	1 P			3 P	
90. Malathrea			1 G		
94. Bouthroton	1 G	2 G (L)	1 G	2 G	
95. Kalivo	1 P				
98. Paliomanastër	1 G				
117. Phoinike		1 G (R), 1 G (L)	1 G (GT?)		
124. Oreokastro/ Lakhanokastro			1 G		
137. Saraginisht / Antigonea	2 P (?)	1 P (L)	2 G		
139. Labovë		1 G (L)			
142. Këlcyra		1 P (??			
143. Limar	2 G				
146. Matohasanaj	1 G, (1st phase)	1 G (R), 2nd phase			
148. Ploçe / Amantia				1 G (GT)	
152. Gradisht/ Byllis		1 G (R)		6 G, (4 GT)	
153. Klos / Nikaia				1 G (GT)	
154. Rabie/Gradishta				1 G (GT)	

Regardless of the type of gateway, the actual wooden gate would have been either single- or double-leaved, depending on the width of the opening. The (almost invariably) inward-swinging leaves of the gates and posterns alike were suspended on wooden *pivots,* that turned in *sockets* cut into the threshold block or separate footing slabs; hinges were never used. A horizontal locking beam, a crossbar, was used to secure the leaves when closed. Holes to

[239] W gate. Identical in layout to the SW gate of Gitana.

[240] SW gate. Identical in layout to the W gate of Polyneri.

receive the end of the beam when closed, and for stowing the bar when the gate was opened are visible at approximately waist-height in the side walls of the gate corridors in some fortifications. Small holes for vertical locking bolts can also be visible in thresholds and lintels. [241]

Another, much rarer method of closure was a vertically deployed drop gate or *portcullis,* a "down-rushing gate", Πύλη καταρράκτης in Greek. The vertical grooves along which the gate slid up and down can be seen in some gate corridor walls. Drop-gates were apparently known to the mid-4th century BC Arkadian military author Aineias the Tactician, who advised trapping the enemy in a gate corridor by dropping a portcullis behind them. The first archaeological evidence of such, however, has been dated to a few decades later, around 312 BC in Dura Europos, and in the following decade in Selinous, Sicily.[242] The last-mentioned is a good and thoroughly studied example of a portcullis. The main gate XII, located right behind the huge North Bastion in the northern outworks is 3.25 m wide, and the gate corridor is 2.58 m long, with jambs at both ends. In the large outer jamb on the south side, 0.97 m thick, there is a groove 11 cm deep and 13 cm wide at a depth of 0.51 m from the outer edge. A corresponding groove is also visible in the northern corridor wall, the back wall of the North Bastion. A conventional two-leaved gate is located 0.33 m behind the deadfall. The Selinuntine outworks are Hellenistic, built in 307–306 BC.[243]

To cover the openings of both gates and posterns, three different means, *post-and-lintel*, *false arch* or *corbelling,* and *vaulting* or *true arch,* were used. The most common would have been the simple post-and-lintel covering, within which large, heavy stone slabs were laid flat across a gap. In corbelling, the gap was spanned incrementally by the stones on each successive masonry course, the upper projecting slightly beyond the lower, thus narrowing and eventually closing the gap. Thus, corbelling is not a self-supporting structure.[244] Corbelled openings had different shapes. A *triangular* corbel had simple diagonal sides meeting at the top (Fig. 10 A). The blocks could also be decoratively cut, resulting in either an arch-like *semicircular corbel* (Fig. 10 B) or a *pointed arch,* if the rounded sides met at a very steep angle at the top (Fig. 10 C). If the corbels served to reduce the width of a gap until it could be covered with a lintel slab, the result was a hybrid form called a *semi-corbel or lintel-on-corbel*.[245] In Epirus, triangular corbels are rare and pointed arch

[241] Lawrence 1979, 249-254; Winter 1971, 255-259, fig. 297.

[242] Aen. Tact. 39.3.–39.4; Winter 1971, 264; Lawrence 1979, 262–264.

[243] Mathieu 2003, 126, 163–166, figs. 223–228; Mertens 2003, 125.

[244] Coulton 1977, 151–153; Lawrence 1979, 257.

[245] Winter 1971, 253 frequently uses the term semi-corbel. An accurate description of different shapes can be found in Rathke 2001, xiii.

corbels are not found.[246] Roundhead corbels are found, as are three distinct shapes of semi-corbels the classifying criterion being the shape of the corbel stones or *consoles* just beneath the lintel. If the consoles have simple diagonally cut undersides, the shape is *trapezoidal* (Fig. 10 D).[247] The consoles can also be decoratively shaped, so that their undersides are either *convex* (Fig. 10 E) or *concave* (Fig. 10 F).[248]

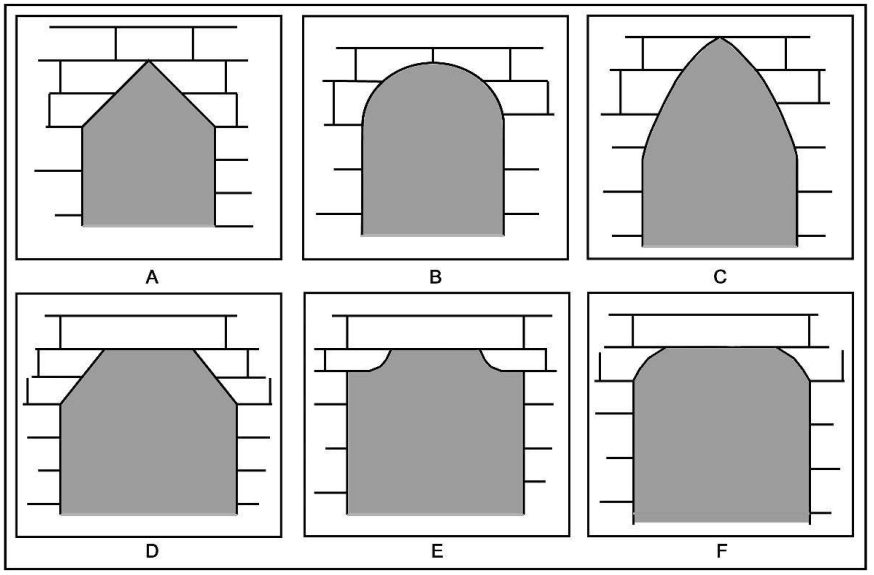

Figure 10 Corbel and semi-corbel shapes: (A) Triangular corbel; (B) Semicircular corbel; (C) Pointed corbel; (D) Semi-corbel, diagonal consoles; (E) Semi-corbel, convex consoles; (F) Semi-corbel, concave consoles. Illustration by M. Suha 2014.

Corbelling can already be found in Mycenaean tholos tombs, bridges, and fortifications, such as the "galleries" of Tiryns. After the Bronze Age, the knowledge disappeared for a time, only to sporadically re-appear in some 6th century BC sites and become more popular from the late 5th century onward.[249] By the mid-5th century, it was possible to find corbel spans up to 1.8 m wide,

[246] The door of a building in Çuka e Aitoit, as seen in Hammond 1967, pl. VI b is a house door and thus not considered here. The nearest pointed corbel can be found in Apollonia in southern Illyria, which is outside the study area.

[247] At the time paper IV was written in 2014, I had no knowledge of the trapezoidal semi-corbelled doors in the tower of Çuka/Çumpora, as described in Cabanes 2008, 92–93 and Giorgi & Bogdani 2012, 173–175. In Appendix II, the site is number 113.

[248] Likewise, in 2014 I was unaware of the convex corbel still in situ in the gate of Paliomanastër, as described in Cabanes *et al.* 2008, 98–99, fig. 2; Giorgi & Bogdani 2012, 190–192, figs. 46–49. In Appendix II, the site is number 98.

[249] Coulton 1977, 153.

and a century later, massive gates could be covered with corbelling. Corbels still remained popular in Hellenistic posterns.[250]

Unlike corbels, more advanced *vaulting*, or a *true arch,* is a self-supporting shape, capable of bearing loads. Vaulting is built of specially cut, wedge-shaped stones known as *voussoirs,* which are locked in place by a *keystone* at the top center position. The underside curvature of the vault is called the *intrados,* while the upper, outer curve is the *extrados*. Seen from the side, the facings of both the voussoirs and the keystone (i.e., the height of the vault between the intrados and extrados), is called the *vault facing*. On its external side, following the curvature of the extrados, there could be a bulging ornamental band, an *archivolt* or *voussure*.[251] Arches were built in two shapes, segmental or stilted (Fig. 11). A *segmental* arch rises from *springer blocks* resting on *imposts*, the voussoirs cover less than 180°, and the lower radial joints of the voussoirs are above the center of the curvature of the arch. In a *stilted arch,* the impost blocks are left out, the arch rises straight from springer blocks, the voussoirs cover 180°, and their bottom radial joint is set below the center of the curvature of the arch.[252]

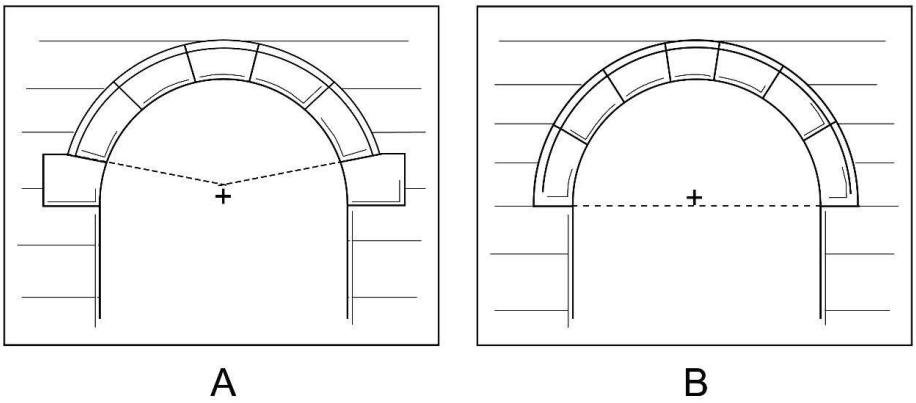

Figure 11 A segmental arch (A) and a stilted arch (B). Illustration by M. Suha 2014.

The dating of the first vaults has been hotly debated for decades. According to T. D. Boyd in 1976, the first vaults only appeared in the last decades of the 4th century in the form of Macedonian barrel vaulted tombs, while the earliest vaulted gateway was found in the Long Walls of Corinth, dated to 303 BC.[253] The excavator of the Great Tumulus of Vergina, Manolis Andronikos, identified the oldest barrel-vaulted tomb as that of Philip II, who died in

[250] Ley 2009a, 217-223.

[251] Ginouves 1992, 140–145, 147–148, 150, pls. 70, 1–2.

[252] Boyd 1978, 90, notes 27–28.

[253] Boyd 1978, 83–84, 89.

336.[254] Dornisch then came to the conclusion that vaulting was invented independently on the different fringes of the Greek motherland around the mid–4th century BC.[255] Ley agreed with Dornisch and refined the idea. She convincingly argued that around the mid–4th century, barrel vaulting was invented in Asia Minor, while simultaneously another type, a short vault only supporting the parapet, was developed in northwestern Greece, having stemmed from the local polygonal masonry tradition.[256]

Naturally, practically all Epirote enceintes should have at least one opening, postern or gate, albeit the rubble enclosures might lack even that. Unfortunately, only a few openings are preserved to such a height that anything could be said about their possible coverings, whether executed in post-and-lintel, corbelling, or by a true arch. The same goes for the other details, such as bolt holes, thresholds, or footing slabs.

When writing Paper IV in 2014, I had no knowledge of the convex console still in situ at Paliomanastër, a circuit dated to the first half of the 4th century, the semi-corbelled doorway in the tower site of Çuke/Çumpora, dated to the 3rd–2nd century BC, or the large semi–corbelled gate at Malathrea/Malahuna, which is dated to the latter half of the 3rd century BC.[257] Similarly, the arched gateway in the SE wall of Phoinike C, dated to the latter half of the 3rd century,[258] and the stilted arch above Gate 6 at Amantia, belonging to the second building phase dated to around the mid-4th century BC, were left out.[259] Likewise, Gradisht/Byllis, with its several arched gateways belonging to the original walls, dated to the latter half of the 4th century, and the extension of the circuit dated to 230–217 BC, were left out.[260]

A portcullis is a very rare feature in Epirote fortifications. Four sites with portcullises are reported in the research literature. At two sites, the existence of a portcullis is certain: at the Tower Gate of Bouthroton, a pair of grooves of unknown proportions is located in the gate corridor, 2.85 m wide by 7 m long, at a depth of 0.7 m from the outer edge. Behind this, half way across the corridor, is a conventional gate. While earlier research interpreted the Tower Gate as being a Hellenistic modification to an earlier, 4th century BC lower

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[254] Andronikos 1984, 197–198, 221–223.

[255] Dornisch 1992, 228–230.

[256] Ley 2009a, 224–229.

[257] In Appendix II, Paliomanastër is number 98. Dating according to Cabanes *et al.* 2008, 98-99; Çuke/Çumpora, number 113, its dating according to Giorgi & Bogdani 2012, 173- 175; Malathrea/Malahuna, number 90, the dating according to Giorgi & Bogdani 2012, 253- 254.

[258] Described in Cabanes *et al.* 2008, 102–103. In Appendix II, Phoinike is number 117. Dating by Giorgi & Bogdani 2012, 85, 169-172.

[259] Described and dated in Cabanes *et al.* 2008, 204–209, 206 fig. 6. In Appendix II, the site is number 148.

[260] Back then I thought the site was not regarded as having been Epirote but Illyrian. The site is described and dated in Cabanes *et al.* 2008, 164–174, figs. 3-4b. In Appendix II, Byllis is number 152.

town circuit, that view has since changed. According to the newer research, the *whole lower town circuit* including not only the Scaean and the Lion Gates, but also the Tower Gate was built in one and the same phase in the late–3rd century, most likely following the capture and ransoming of nearby Phoinike in 230 BC.[261]

In Malathrea/ Malahuna the corbelled main gate, 2.5 m wide, had a portcullis, the preserved grooves of which are large at 15 by 19.5 cm. Cabanes *et al.* reported finds discovered from the site as including ceramics datable to the 3rd–2nd centuries and nine coins of the Koinon of the Epirotes, 232–168 BC, thus dating the fort to the latter half of the 3rd century BC, the dating of which was later also agreed upon by Giorgi & Bogdani.[262]

One case not mentioned in literature, but still a very strong candidate for a portcullis, is Gate 6 of Amantia. Photos of the gate show clear upright grooves located just behind the restored stilted arch, suggesting the presence of a portcullis. However, no mention of such can be found in the literature. This gate, like the majority of the gates of the enceinte, is built of the regular ashlar masonry used in the second phase of fortification, dated to the mid–4th century BC.[263]

One uncertain case is that reported at the Castle of Paramythia by Hammond, according to whom the subterranean entrance through a cave in the east side had portcullis grooves, but is today completely overgrown and unapproachable.[264] Another is the Dodona east gate, about which the excavator D. Evangelides argued in 1960 that a portcullis was located in between the two sets of stone jambs located at a distance of 40 cm from each other.[265] Due to the excessive thickness, that is very unlikely. The gate will be examined later, in Chapter 4.2. In addition to these, I have encountered another unclear case in the north gate of Kastri Rizovouni, to be discussed in Chapter 4.1.

3.4 COMPONENTS OF FORTIFICATIONS: TOWERS AND BASTIONS

While the indentations of the curtains provided some enfilading, it would have only been along a single flank, in one direction. To improve the situation, *bastions,* structures with two flanks jutting out of the wall line, were developed

[261] Lawrence 1979, 264-265; Cabanes *et al.* 2008, 73–76; Karaiskaj 2009, 43-45; Hodges 2013, 7–10.

[262] Cabanes *et al.* 2008, 195–97, figs.1-6; Giorgi & Bogdani 2012, 253–254.

[263] Cabanes *et al.* 2008, 206–208.

[264] Hammond 1967, 106, 715, n. 1.

[265] Evangelides 1960, 173.

early on during the Bronze Age, at the latest by the Iron Age.[266] A bastion is a solid-based, unroofed, but battlemented projection of a similar height as the adjacent curtain walls. Bastions later developed into more advanced *towers* that had at least one enclosed, roofed chamber at the wall-walk level. The closure of the battlements into chambers took place from the 4th century BC onward.[267] In general, the first towers were rather small, and placed only in the most vulnerable spots, but with time they became larger and were deployed in a more systematical way around the circuits. Hellenistic towers could also have hollow ground floors, enabling the construction of a lower chamber, below the wall-walk level, in place of the solid foundation.[268]

Almost half of the Epirote enceintes, 65 sites, have mentions of one or several towers (or bastions), in addition to which there are two uncertain cases. The tally does not include tower sites (i.e., sites consisting of a lone tower, either with or without an accompanying enclosure). Nine sites studied in Paper V– Kastri Rizovouni, Kioteza, Agios Donatos, Elea, Dodona acropolis, Doliani, Gitana, Pyrgos Ragiou, Kastritsa and Megalo Gardiki– will not be discussed here, but are presented in detail in Chapters 4.1–4.3.

In ruined sites, distinguishing between a solid-based bastion and a tower is difficult at best. Early towers tended to be of modest proportions, but later fortifications boasted large, complex towers. In the literature on fortifications, the largest towers are variously called either towers, catapult towers, (artillery) bastions, or batteries. In Paper V, I used the term *battery* for large towers with a total area of ca. 100 m² and above.[269]

3.4.1 TOWERS WITH INTERNAL CROSSWALLS

Some solid–based towers have their socle filling compartmented by crosswalls within, running between the flanks and the front and back walls.

The first time I came across a mention of such a structure in the literature was in Karlsson's dissertation. He had encountered two types of crosswalled towers in Sicily: those with the internal walls in the shape of a T, and the other with internal walls "in the shape of a Greek cross". He argued that many such towers in Sicily were built during the reign of Agathokles in 305–289 BC. Agathokles' daughter Lanassa was married to Pyrrhos in 295 BC, and the kings would have known each other for a time before the marriage; Karlsson argued

[266] According to Winter 1971, 152, the earliest wall projections were found in the Middle Geometric walls of Smyrna. What about the horseshoe-shaped projections in the mudbrick perimeter wall of Early Helladic Lerna?

[267] Winter 1971a, 152; Ley 2009a, 251; Fredriksen 2011, 56; Karlsson 1992, 11.

[268] Karlsson 2002, 95 argued that Greek towers of the 4th century were always solid-based, and that hollow ground stories only appeared during the 3rd century.

[269] Ginouvès 1998, 24–25. Regarding differentiating a battery from a tower, from Paper V: To be exact, the smallest battery had an area of 97.7 m², but I used a round number as such a figure would have looked strange. In contrast, the largest tower had a total area of 87.9 m².

that they shared military ideas and had their architects studying each other's fortifications, so that when Pyrrhos founded Antigoneia both the walls and towers utilized the compartment wall technique. According to Karlsson the earliest such tower was found in Corinth, built by Demetrios Poliorketes in 303 BC, and another instance would be New Halos, again built by the same king in 302 BC. The idea would have then spread to Sicily and Epirus, during "sometime in the end of the 4th century BC".[270]

In his dissertation, Nankov listed 77 crosswalled towers located all over Greece, six of which are in Epirus: three in Trikastron, two in Raveni, and one in Klimatia. According to Nankov, in towers located on slopes, the crosswalls helped to distribute the fill within and prevent it from sliding down. On level ground, the walls would have been useful in localizing damage caused by different forms of mechanized attack, and thus preventing a total tower collapse. He dated the earliest crosswalled towers in Opountian Lokris to the final quarter of the 4th century BC.[271]

On the other hand, Ley argued for an earlier, latter half of the 5th century BC date, for both compartmented curtains and towers with internal crosswalls found in northwestern Greece. She stated that the whole northwest differed from the Greek motherland, where both types of cross-walls were much less common.[272]

In Epirus, the type with the "shape of a Greek cross" is rather frequent (Fig. 12). Scattered throughout Epirus are 103 crosswalled towers, spread across 11 sites. The towers at Kastri Rizovouni, Doliani, Gitana, Pyrgos Ragiou and Megalo Gardiki are discussed later, in Chapters 4.1–4.2.

Figure 12 Kastri Rizovouni, crosswalls within the tower T7. The longitudinal wall is beneath the scale bar, the perpendicular behind the bush. The front facing of the tower has collapsed and is not visible. View towards the southeast. Photo M. Suha 2014.

[270] Karlsson 1992, 110–111.

[271] Nankov 2009, 446–449, 467–470, table 5.8. In Appendix II, Trikastron is number 23, Raveni 72 and Klimatia number 82.

[272] Ley 2009a, 259.

Of the rest, Kastri Acheronta has 33 crosswalled towers, 24 of which belong to the first phase inner circuit, dated to between the end of the 5th century and the 340s. The second phase outer walls, dated to 340s–167 BC, had nine larger towers.[273] The eight towers at Ammotopos all belong to the second phase of the enceinte, dated to between the latter half of the 4th and the first half of the 3rd century.[274] The three towers at Trikastron are dated to the 4th or 3rd century.[275] Six can be found in Raveni, the dating of which is uncertain.[276] In the older outer enceinte of Malçan, dated to the latter half of the 4th century, there are 15 towers.[277] Finally, there are eight towers in Phoinike, spread around enceintes B and C that are dated to the latter half of the 3rd century BC.[278] The other type, where the crosswalls form a T–shape, is only represented by a single tower in Klimatia.[279]

Hammond provided small sketches of crosswalled towers from two sites. In Trikastron, he described the three towers in the south side, each with a frontal width of 8 m and projecting some 6 m from the curtain at right angles. The sketch depicts a tower with four compartments in the projecting part, was and thus most likely to have had an additional two in the curtain behind, although the latter are omitted.[280] If, on the other hand, the curtain does not have compartment walls behind the tower, the situation is identical to the tower at the northern spur wall of Doliani.[281] The other site is Raveni. Hammond's sketch shows a large rectangular tower jutting out of a junction of two curtains running in different directions. The tower is thus not built at right angles to either curtain, but askew, closer to an angle of 45°. The projecting part of the tower is divided into four equal compartments, but again, the curtain is omitted from the drawing. Apart from this omission, the drawing is identical to the large corner towers of Megalo Gardiki and Pyrgos Ragiou.

Semicircular towers have one internal crosswall bisecting the tower lengthwise, as seen in the towers in Lygia A and Ambrakia. The first mentioned site has been dated to "not earlier than the early 4th century BC", while the Ambrakian tower, excavated in Irakleitou Street in 2003, was regarded as an early 4th century BC addition to a pre-existing wall.[282]

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[273] In Appendix II Kastri Acheronta/Pandosia is number 20. The dating by Dakaris 1971, 43, 81, 167-168

[274] Number 22 in Appendix II. Dating by Angeli 2005, 19-25.

[275] Dakaris 1971, 75, 81.

[276] 72 in Appendix II. Dating of Raveni is unknown, but most likely 4th–3rd century BC.

[277] Number 109. Dating by Cabanes *et al.* 2008, 136-137.

[278] Phoinike, number 117 in Appendix II. Dating by Giorgi & Bogdani 2012, 85, 169-172

[279] Hammond 1967, 191-192, plan 21,11, pl. XIb. Klimatia is number 81.

[280] Hammond 1967, 162.

[281] See Chapter 4.1 on Doliani. Also, number 62 in Appendix II.

[282] Spanodimos 2019, 263; Yiouni 2004, 50–52; Yiouni 2008b, 81–84.

In many sites, the dense vegetation hinders close inspection, making it impossible to determine whether crosswalled towers are in fact much more common.

3.4.2 SEMICIRCULAR TOWERS

While towers of a rectangular shape were the most common type, round and semicircular towers also appeared in Greek stone fortifications during the course of the 4th century BC. Rounded towers enabled wider fields of fire and observation, as there were no sharp corners blocking them. According to Adam, such towers were favored in the Peloponnese during the fortification program of the Theban general Epaminondas in the years following Sparta's defeat at Leuktra (i.e., 360s BC). They are, indeed, common in the 4th and the 3rd century BC Peloponnesian fortifications, to be found in the enceintes of Messene, Gortys, Stymphalos, Pheneos, Kleitor, Phigaleia, Asea and Mantinea. In the early 3rd century BC, a large semicircular tower was also built in the *diateichisma* on the Pnyx at Athens.[283]

In Epirus, no truly round towers are to be found in any of the Classical–Hellenistic enceintes. There are twelve large semicircular towers with diameters of 6–14 m at seven sites: Lygia A, Ambrakia, Gitana, Butrint, Labovë, Matohasanaj, and Gradisht.[284] In addition, the most recent satellite image of Chrysorrachi shows a possible semicircular tower bisected by a single crosswall, at the junction of the two main curtains.[285]

Hammond mentioned four semicircular towers in Epirus at Gitana, Labovë, Ambrakia and Paramythia, and dated all of them to the first quarter of the 3rd century BC.[286] Three of these can be found, but the one at Paramythia cannot; I have visited the site several times but could see nothing resembling a tower in the whole enceinte. The closest feature resembling a semicircular tower is a stretch of curtain wall north of the lower gate (Fig. 13), the only stretch where any curving shape is discernible.

[283] Lawrence 1979, 378–379; Adam 1982, 46–48, 62; Maher 2011, 205–206, 211–212, 225-227, 238, 248-251, 259-261, 353, 364-367, 441-442, 451-455, 467, 474-476, 490-498.

[284] Six in Lygia/Lygaria A, number 66 in Appendix II, (at least) one in Ambrakia (10), and one per site in Gitana (63), Butrint (94), Labovë (139), Matohasanaj (146) and Gradisht (152). The Gitana tower will not be discussed here, but will be presented in detail in Chapter 4.2.

[285] Number 102 in Appendix II. Note that Hammond does not mention a semicircular tower here; the feature was only revealed in the most recent satellite image.

[286] Hammond 1967, 84, 585.

Figure 13 Paramythia, possibly the "semicircular tower" of Hammond? At the center is the Medieval/Modern lower town gate opening toward the west, above it the curtain runs in a curve. Perhaps this was what he meant? Image © 2019 Maxar Technologies.

The Ambrakian tower of Hammond should, according to his description, be located behind a theater. The city wall should form the back of the theater seating, and behind that would have been the tower.[287] Today, the seating of the small theater is visible, but I know nothing about the fortifications in the vicinity. However, a semicircular tower was excavated in the northern part of the city in Odos Irakleitou in 2003. A stretch of the adjacent 3.8 m thick curtain wall was also revealed. While the size of the tower was not indicated, by looking at the associated map and photo, one can deduce that the tower was approximately 6–7 m in diameter. The masonry of both the tower and the curtain are rather flat and narrow ashlars with quarry face. The tower is solidly filled with rubble and bisected by one crosswall.[288]

In Labovë, there is a tower with a rounded front that has a diameter of 8.25 m.[289] The site is located on the Albanian side of Epirus in the valley of the Suhë, a tributary of the Drino some 13 km west–southwest of Gjirokaster. The tower is located in the southeastern corner of the site, facing eastward (Fig. 14). Adjacent to the tower in the west is the main gate, its corridor width splaying from 2.25 to 2.7 m. Strictly speaking this tower is not semicircular as its front curvature is very shallow, and as such, it barely flanks the gate. Based on the find material from the site, Giorgi and Bogdani interpreted the site as first having been an open settlement starting from the 5th century BC onward, and only having been fortified during the 3rd or 2nd century BC.[290]

[287] ibid.

[288] Yiouni 2003, 81–84, fig. 47.

[289] Number 139 in Appendix II.

[290] Giorgi & Bogdani 2012, 295–298.

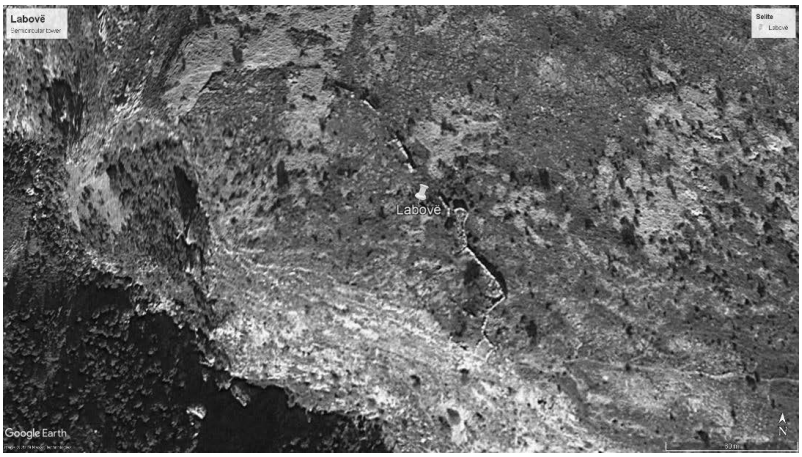

Figure 14 Labovë. The "semicircular" tower is faintly visible slightly down and to the right of the name "pin". Image © 2019 Maxar Technologies.

In Lygia A,[291] there are six semicircular towers, all with a circumference of 6.6–9.9 m and projecting 3.3–6.6 m. The towers are bisected by one wall running through the middle, an identical trait to the tower in Ambrakia. Spanodimos dated all three enceintes A–C as "not earlier than the early 4th century BC".[292] In the north of the study area, there is one semicircular tower in the first phase fortifications of Matohasanaj that has a diameter of 7 m and is dated to the latter half of the 5th century.[293] In Gradisht/Byllis a very large semicircular tower with a diameter of 9.6 m and strengthened by "triple inner walls" belongs to the second construction phase, when a "fortified courtyard" was added in front of the northern tip of the original enceinte. The second phase has been dated to 230/219–167 BC.[294]

Finally, in Bouthroton the "Tower Gate" in the southeastern sector is flanked by different towers on both sides. On the western side is a small rectangular tower, but the eastern is protected by a large U-shaped tower, 8.2 m wide and 15.55 m deep. However, this tower is different from the others as it has a hollow ground floor. The Tower Gate has been dated to the late 3rd century BC.[295] More on this tower is discussed in the next chapter.

3.4.3 HOLLOW- BASED TOWERS

Advanced towers could have a hollow base instead of filling, enabling a ground floor chamber to be inserted into the tower. In such towers the walls, most

[291] Lygia/Lygaria A–C, number 66 in Appendix II.

[292] Spanodimos 2019, 255–264, note 30, figs. 3-4.

[293] Cabanes *et al.* 2008, 210–211. Matohasanaj, number 146 in Appendix II.

[294] Cabanes *et al.* 2008, 164–174.

[295] ibid. 73-76; Ceka 1999, 53–54.

commonly around 1–1.5 m thick, were built of two facings, usually leaving only a very narrow space in between the backs of blocks, leaving no room for an infill.

According to Lawrence, only a few early towers had a ground floor chamber, whereas in Hellenistic sites, they were frequent. Karlsson went even further, claiming that the "4th century towers were always solid up to the wall-walk level".[296] On the other hand, based on the existence of hollow-based towers at Gyphtokastro, Mantineia and Priene that are dated to the 4th century, Winter argued that early examples of such could be found, albeit rarely, before Epaminondas and the Macedonians (i.e., 360s BC onward).[297]

In nine Epirote enceintes there are 28 hollow-based towers, in addition to which there are two uncertain cases at Ktismata.[298] The towers at Kioteza, Agios Donatos and Dodona will not be discussed here, as they will be presented in detail in Chapter 4.3.

The *tetrapyrgion* of Malathrea is surrounded by four towers 5–5.5 m square. The chambers within have a floor area of ca. 3.1 x 3.4 m, while the evidence points to an unusual height of the ground floors, with a chamber height of 4 m. The fort has been dated to the 3rd century, more likely to its latter half.[299]

Both towers flanking the Tower Gate of Bouthroton are hollow-based. The western tower is small, 3.95 m square, and its walls are pierced by three arrow slits pointing in different directions. The large U-shaped tower is divided into two successive chambers, the inner room being rectangular and the outer semicircular in shape. Three shooting apertures pierce the outer chamber walls, and a stone pillar is located in the center of both rooms (Fig. 15).[300] All walls of the complex are around one meter thick, built of two faces of longish quarry–faced trapezoidal blocks bound by frequent headers and no infill. As

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[296] Lawrence 1979, 222–223; Karlsson 2002, 95.

[297] Winter 1971, 162 & n. 44.

[298] Nine at Dodona, number 56 in Appendix II, four in Malathrea (90), eight in Saraginisht/Antigonea (137), and one per site at Kioteza (37), Agios Donatos (38), Selo (105), Malçan (109) and Matohasanaj (146). Ktismata, number 121, is vaguely described by Hammond 1967, 200-201: The site has three large rectangular towers, two of which have mentions of double outer walls and are thus (probably) hollow-based.

[299] According to Cabanes *et al.*, the pottery found on site was datable to the 3rd and 2nd centuries BC, like the nine coins belonging to the Koinon of the Epirotes, also dated to 232–168 BC. The hollow-based towers and the corbelling of the gates were characteristics of the 4th and 3rd centuries BC. Later, Giorgi & Bogdani downdated the site slightly, to the latter half of the 3rd century BC. Cabanes *et al.* 2008, 95–97; Giorgi & Bogdani 2012, 253–254.

[300] The Tower Gate was not studied in Paper IV, as the covering of the gate is debatable, nor were the towers included in Paper V, as I have not studied the structure personally, just visited the site and taken photographs.

mentioned earlier, the Tower Gate, along with the whole lower town circuit, is today considered as a late–3rd century BC build.[301]

Figure 15 Bouthroton, the Tower Gate. The outer chamber of the U-shaped eastern tower. The shooting apertures are visible just above ground. Panorama photo by M. Suha 2005.

In the fort of Matohasanaj, the unflanked frontal gate in the first phase was covered in the second phase by a hollow-based tower measuring 6.6 x 7.55 m, and the new gate was then opened through its northeastern flank. Cabanes *et al.* dated the first phase to the latter half of the 5th century and the second to the mid-3rd century BC.[302]

The walls surrounding the settlement proper and the *euchorion* at Antigonea have eight hollow-based towers 6.4–6.5 m wide by 6.5–7 m deep. The enceinte is regarded as having been founded by Pyrrhos in the early 290s BC and is named after one of his wives.[303]

In Malçan, there is a hollow-based "tower-gate" in the northern tip of the external, first phase enceinte. The gate corridor runs through the large tower measuring 12 x 10 m. Cabanes *et al.* dated the outer enceinte to the second quarter of the 4th century BC.[304] Selo, with at least one hollow-based tower 6.9 m square, is also dated broadly to the 4th century, according to Cabanes *et al.*[305] As for the uncertain cases at Ktismata, the dating of the fortifications of the site is as vague as its description, offering no clue as to the dating.[306] Thus, most Epirote hollow-based towers are 3rd century products, except for Malçan and Selo, which have been dated to the previous century.

[301] Hodges 2013, 7–10.

[302] Cabanes *et al.* 2008, 210–211.

[303] Cabanes *et al.* 2008, 118-124; Çondi 2018, 529–538.

[304] Dakaris 1972, 151-152; Cabanes *et al.* 2008, 136-137; Giorgi & Bogdani 2012, 184-186.

[305] Cabanes *et al.* 2008, 131-132.

[306] Hammond 1967, 200–201.

3.5 MASONRY FORMS AND SURFACE TREATMENT

Although they are no longer used as a dating criterion, the masonry forms of the Epirote fortifications are listed in Appendix II when the source literature allows, and the dating evidence presented if it has been provided. Due to the variety of the research literature used, the masonry was not always mentioned or the description of such was ambiguous at best: "Rectangular" or "isodomic" masonry are terms one comes across at many sites. However, what kind of masonry is meant by these terms? Rectangular masonry could be associated with ashlar, but isodomic is uncertain as that merely indicates that the masonry courses are of similar height. However, the masonry itself could be either ashlar or trapezoidal. Furthermore, various types of masonry could have been used in any single enceinte in different sectors (or construction phases). Additionally, the quality of masonry on the inner and outer faces of the curtains and towers can be of very different quality, with looser joints and wildly changing shapes of blocks used in the less threatened inside faces. This is evident in the chamber walls of the tower in Agios Donatos as well as in the curtain walls of Elea, especially in the reverse battery added to the southern end of the east curtain.[307] Hence, the following tallies should be taken only as estimates of the frequency of different masonry styles (Table 3, left side and middle).

Table 3. *Masonry styles and facing treatment of blocks in Epirote fortifications.*

Number, site name	Masonry				Facing treatment		
	Polygonal	Ashlar	Trapezoidal	Rubble	Quarry face	Tooled face	Broached work
2. Argos Amphilochikon		X			X		
6. Phidokastro/ *Ambrakos*		X?					
7. Paleokoula		X?					
8. Embesos	X	X?					
10. Ambrakia		X			X	X	
12. Kastro Rogous/ *Bouchetion*	X	X	X		X		
13. Paliorophoron/ *Elatreia*	X	X?			X		
14. Kassope	X				X	X	
16. Splantza?	X						
17. Cape Cheimerion	X						
18. Nekyomanteion	X				X		X
19. Xylokastro/ *Ephyra*	X						
20. Kastri Acheronta/ *Pandosia*	X		X		X		
21. Kastri Rizovouni/ *Batiai*	X		X		X		

[307] See Suha 2011, figs. 4 and 5; Suha 2016, figs. 13–14.

22. Ammotopos/ *Orraon*		X			X		
23. Trikastron	X	X			X		
24. Kastriza/ Akropolis of Koroni	X						
27. Pyrgi	X	X?					
29. Paleochori Botsari		X	X				
30. Vathy		X					
31. Voulista Panagia	X	X?	X?				
33. Kato Mousiotitsa	X						
34. Sistrouni(on)		X	X				
35. Mamakou/ Ellenika		X?	X?		X		
37. Kioteza	X				X		
38. Agios Donatos Zervochoriou	X				X		
40. Paliokastro Morfis	X						
42. Dymokastro/ *Elina*	X				X		
43. Polyneri/ Koutsi	X				X	X	X
44. Faskomilia/ Gourgara				X			
45. Paramythia Castle	X				X		
47. Elea	X				X		
48. Phrosini				X			
49. Kalogeritsa	X						
50. Hani Emin Aga	X						
51. Kalenji/ Kalentzi	X	X					
52. Ambelochori/ Skloupo	X						
53. Sirouno/ Khouliaradhes	X						
54. Tsouka	X		X		X		
55. Episkopiko	X	X			X		
56. Dodona Acropolis		X	X		X	X	
57. Vereniki		X	X				
60. Kastro Kallitheas		X ?	X?				
61. Skala Zorianou		X			X?		
62. Doliani/ *Phanote*			X		X		
63. Gitana	X		X		X	X	
65. Pyrgos Ragiou	X		X		X	X	
66. Lygia/ Lygaria A-C			X	X	X		
67. Mastilitsa/ Masklinitsa				X			
70. Uzdina/ Pente Ekklesies	X		X		X		
72. Raveni	X				X		
73. Vrousina		X					
74. Kato Zalongo		X					
75. Psina	X	X?	X?				
77. Kastritsa/ *Tekmon*	X				X		
78. Gradetsi		X					
79. Ioannina, Kastro		X			X		
80. Megalo Gardiki/ *Passaron*	X				X		
81. Klimatia/ Veltsista		X					
83. Paliouri/ Dragoumi	X						
84. Despotikon/ Paliokastro Ai Minas		X			X		
85. Gardiki Filiaton			X		X		

86. Kokkinolithari/ Litharostrougga		X					
87. Χτίσμα τού Φατηριού (?)		X?	X?				
88. Qyteza				X			
89. Aetos/ Çuka e Aitoit	X		X		X		
90. Malathrea/ Malahuna			X		X		
91. Vagalat			X				
94. Butrint/ *Bouthroton*	X		X		X		
95. Kalivo	X				X		
98. Paleomanastër		X	X		X		
99. Shën Gjini			X				
100. Tsamanta/ Lemiko		X			X?		
101. Lia/ Babouri	X	X					
102. Chrysorrachi/ *Helikranon*	X	X					
104. Moni Sosinou	X	X					
105. Selo/ Kalaja e Selose	X	X	X		X		
106. Lidiza/ Sinou/ Ripësi	X		X?		X		
108. Duka		X?	X?	X?			
109. Malçan		X	X		X		
110. Karalibeu/ Kara-Ali-Bey		X?	X?				
111. Dema Wall		X				X	
112. Çuka		X	X		X		
113. Çumpora/ Çuke		X	X		X		
114. Metoqi			X		X		
117. Finik/ *Phoinike*	X		X				
118. Koqino Lithari				X?			
119. Dhrovjani/ Kastris?				X			
120. Pepeli				X			
121. Ktismata		X					
122. Kastraki of Agios Minas/ Revnikio			X		X		
123. Mesogephyra		X					
124. Oreokastro/ Lakhanokastro			X				
125. Melan/ Melanit Tekke	X	X			X		
127. Kamenica	X				X		
128. Hundësova			X		X		
129. Kalaja e Borshit/ *Panormus?*			X		X		
130. Karosi/ Qeparoi				X			
131. Himarë Castle/ *Chimaira*	X		X		X		
132. Pirgu/Katafiqi				X			
133. Zhulati		X					
134. Kalaja e Kardhiqit	X				X		
137. Saraginisht/ *Antigonea*	X	X					
139. Labovë		X					
140. Guri I Qytetit/ Përmet		X				X	

142. Këlcyra		X?	X?		X		
143. Limar		X?	X?				
144. Lekël	X	X			X		
146. Matohasanaj	X	X	X		X		
147. Kalivac				X?			
148. Ploçe/ *Amantia*	X	X	X		X	X	
149. Mavrovë/ *Olympe*		X	X		X		
150. Ericho/ *Orikos*		X				X	X
151. Kalaja e Kaninës		X			X	X	
152. Gradisht/ *Byllis*			X			X	
153. Klos/ *Nikaia*	X	X	X				
154. Rabie/ Gradishta	X		X				

The facing treatment of the blocks, regardless of their shape, is rarely mentioned. I noted the masonry and facing treatments in the sites I visited; for the others, it was possible to infer if photographic evidence was provided. Thus, it was possible to identify the facing treatment of roughly half the sites (Table 3, right side). The most common facing treatment was a somewhat bulging, rough *quarry face* with 56 cases, while a smooth *tooled face* was found in 12 sites. In Ambrakia, Elea, and Gitana, both quarry and tooled faced blocks can be found in the same enceinte. It must also be stated that in many cases the curtains had quarry facing, but the block facings in the gate and postern corridors were tooled. Such is evident, for example, in Kassope, Kastri Rizovouni and Pyrgos Ragiou, which will be discussed in detail in Chapters 4.1–4.2.

A peculiar type of *broached work,* in which quarry faced blocks have been decorated by downward slanting grooves,[308] can be found at three sites: Orikos, Polyneri and Nekyomanteion.[309] It must, however, be noted that at all of these sites, the predominant facing treatment was either quarry face (Nekyomanteion) or tooled face (Orikos); broached work was in the minority. Polyneri has predominantly quarry faced treatment, but there is also a stretch of curtain with tooled face while broached work can only be found at the west gate (Fig.16). Broached work is decorative and must have required more work than the normal quarry face usable as such, straight after extraction. Perhaps some blocks, originally with a quarry face were deemed as too "bulging" after they had already been laid in place? If so, the broached work could be the result of trimming down the inappropriate bulge in place, without having to remove the block from the wall.

[308] Scranton 1941, 21.

[309] Orikos/Oricum/"Ericho", number 150, Polyneri/Koutsi 49 and Nekyomanteion 18 in Appendix II.

Figure 16 Polyneri/ Koutsi, west gate. Broached work in the largest block. Looking east. Photo by M. Suha 2013.

Massive masonry of irregular trapezoidal or ashlar blocks with individual blocks some 2 m and upward also deserves a mention, as it is by no means common. According to Hammond, the most massive walls in Epirus can be found in Phoinike. The fortifications of the eastern side have been built of enormous irregular trapezoidal and ashlar blocks some 2 m or more in height and width.[310] These were then compared to the scanty remains of walls at Kara-Ali-Bey and the better preserved ones at Kalivo.[311] Hammond dated such walls to the last quarter of the 4th century BC, basing his claims on the facing treatment of the most massive blocks at Phoinike which he compared to the blocks used in the retaining wall of the third phase of Pnyx at Athens, dated to the third quarter of the century.[312] The blocks at both Phoinike and Pnyx III do have similarities. The Pnyx blocks are huge; two of the largest have been reported as having dimensions of 2.9 x 1.3 x 2.5 m and 3.6 x 1.4 x 2.2 m.[313] All have a peculiar treatment of block margins, or "stepped bevels", for lack of a better description (Fig. 17).[314] Pnyx III has been dated to 330–326 BC.[315] Since Hammond's time, newer research has established a different chronology for

[310] No measurements of the Phoinike blocks could be found. Their size can, however, be deduced from the photos, where men are standing in front of or beside them, showing that the blocks are some 30–40 cm higher, cf. Cabanes *et al.* 2008, 102, fig. 3; Giorgi & Bogdani 2012, 170, fig. 11.

[311] In Appendix II, Phoinike is number 117, Karalibeu/Kara-Ali-Bey 110 and Kalivo 95.

[312] Hammond 1967, 572–573, pl. VIIa.

[313] Stanton 1994, 13–14.

[314] Cf. the treatment of the Phoinike blocks, visible in Giorgi & Bogdani 2012, 80, fig. 8 and 170, fig. 11.

[315] Rotroff 1996, 40.

the Phoinike walls. The earliest occupation on site was centered in the southeastern corner of the ridge, surrounded by circuit A, one part of which is the wall with the massive blocks, all of which has been dated to the first half of the 4th century.[316]

Karalibeu has been described as having massive masonry, but neither the sizes of the blocks nor the surface or margin treatments of the blocks are described, nor are they visible in the few photos of the site. The dating of the site is unclear, but it is possible that it preceded large Chaonian fortified settlements such as Phoinike.[317] I am not aware that blocks fitting this description would have been used in the walls of Kalivo, as Hammond claims.

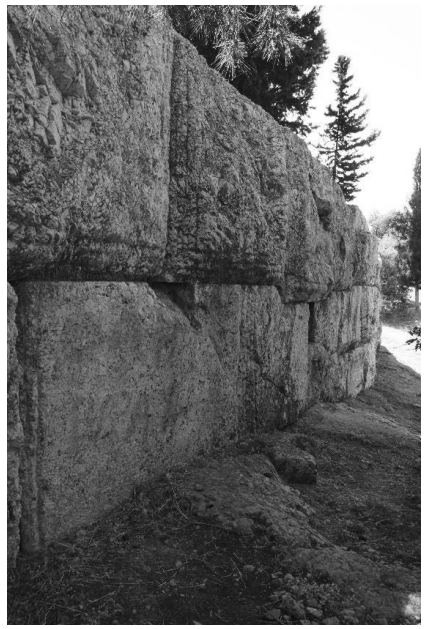

Figure 17 Athens, the Pnyx III retaining wall. The massive blocks with the peculiar stepped "bevels" on all margins of the blocks that closely match those in Phoinike. Photo M. Suha 2013.

Few other sites with massive irregular trapezoidal masonry can be found. According to Karaiskaj, some blocks in the Dema Wall are up to 2.5 x 1.5 m in size.[318] In the extreme northeastern corner of the study area is Rabie, a small fort, with polygonal and trapezoidal masonry, with occasional huge blocks

[316] Cabanes *et al.* 2008, 109–110.

[317] Giorgi & Bogdani 2012, 178–179 offer no dating, but introduce the idea of this site being older than Phoinike. Ceka 1999, 67 only mentions the site, comparing the masonry with Malathrea/Malahuna and thus "dating" the walls to the 4th–3rd century BC.

[318] Karaiskaj 2009, 46.

measuring up to 2.8 x 1.4 m.[319] Both Ceka and Muçaj and Cabanes *et al.*, noted the use of large trapezoidal blocks in Rabie, comparing them to the walls of Klos,[320] located some 15 km to the west–northwest, arguing that Rabie would have been a dependent of Klos and as such would have been built at the same time, during the latter part of the 5th century BC.[321] However, neither the facing, nor margin treatments of the blocks in Rabie are described, and the same goes for the blocks in the wall of Klos.[322]

Continuing on the topic of untypical masonry, another site worth mentioning is Labovë.[323] Here, the fortifications are built of long, narrow ashlars of a peculiar appearance. The single-block curtains are only 1–1.5 m thick, but despite their apparent flimsiness they still stand up to 17 masonry courses, 5 m high in some places. Occasionally even the parapet, 0.7–1.0 m thick, is partly preserved, bringing the total height of the fortifications to ca. 7 m.[324] The joints between the blocks have a slight bevel (i.e., on the surface the joints appear to have a gap of ca. 3 cm, but slightly deeper the blocks are actually flush-fitting).[325] No drafting is present.

Hammond argued for a Pyrrhic date for this site.[326] Excavations have since been conducted in Labovë, yielding finds from the 5th–2nd centuries BC. Cabanes *et al*. dated the enceinte to the 6th–5th century BC, but later Giorgi and Bogdani arrived at a wholly different conclusion: the site was an unwalled settlement during the 6th and 5th centuries and fortified only during Pyrrhos' reign, to control the gorge of Selcka to the north and the territory of Antigonea located some 6 km to the west–northwest.[327]

3.5.1 DETAILS OF MASONRY: VERTICAL GROOVES, DRAFTING OF CORNERS, AND CLAMP HOLES

Vertical grooves in curtains are smooth channels, usually around 10 cm wide, cut into the bulging masonry. A *drafted corner* consists of a smooth band some 5–10 cm wide along both sides of a projecting corner. Both features are conspicuously common in Epirus, according to Lawrence.[328] Indeed, there are at least 36 sites with drafted corners (Fig. 18) and 12 with vertical grooves (Fig.

[319] Rabie/Rabije/Gradishta, number 154 in Appendix II. Ceka & Muçaj 2005, 92-93.

[320] Klos/Nikaia is number 153 in Appendix II.

[321] Cabanes *et al.* 2008, 190.

[322] In Cabanes *et al*. 2008, 177, fig 3 shows that there are large trapezoidal blocks in the walls of Klos, but neither their size nor the margin treatments are not visible.

[323] Labovë, number 139 in Appendix II.

[324] Giorgi & Bogdani 2012, 296–297, figs. 105–106; More photos of the walls in Cabanes *et al.* 2008, 127, figs 2 & 3.

[325] Cabanes *et al.* 2008, 128.

[326] Hammond 1967, 209, 585–586, Plan 21, 8..

[327] Cabanes *et al.* 2008, 127–128; Giorgi & Bogdani 2012, 296–297.

[328] Lawrence 1979, 243.

19). In descriptions of some sites the absence of grooves and/or drafting is mentioned (Table 4). Some sites such as Elea and Kastro Rizovouni have both vertical grooves and drafted corners, while some like Kalentzi only have grooves, and some only have drafted corners but no grooves. Furthermore, as the literature on the sites is not consistent, there might be many more cases of both.

Figure 18 A drafted corner at Bouthroton. Photo M. Suha 2005.

Figure 19 A vertical groove at Elea. Photo M. Suha 2010.

Table 4. *Corner drafting and vertical grooves or their absence, if mentioned.*

Number, site name	Drafted corners	Vertical grooves	No drafting
2. *Argos Amphilochikon*			X
6. Phidokastro/ *Ambrakos*			X
12. Kastro Rogoi/ *Bouchetion*	X		
14. *Kassope*	X		

18. Nekyomanteion	X		
20. Kastri Acheronta/ *Pandosia*	X		
21. Kastri Rizovouni/ *Batiae*	X	X	
37. Kioteza	X		
38. Agios Donatos	X	X	
42. Dymokastro/ *Elina*	X	X	
43. Polyneri/ Koutsi	X		
47. *Elea*	X	X	
50. Hani Emin Aga	X		
51. Kalenji/ Kalentzi	X	X	
52. Ambelochori/ Skloupo	X		
53. Sirouno/ Khouliaradhes	X		
55. Episkopiko/ Kastri			X
60. Kastro Kallitheas			X
62. Doliani/ *Phanote*	X		
63. *Gitana*	X	X	
65. Pyrgos Ragiou	X	X	
70. Pente Ekklesies	X		
75. Psina/ Kastri	X		
77. Kastritsa/ *Tekmon*	X		
78. Gradetsi	X		
79. Ioannina, Kastro		X	
80. Megalo Gardiki/ *Passaron (?)*		X	
81. Klimatia/ Veltsista	X		
89. Çuka e Aitoit	X	X	
90. Malathrea/ Malahuna	X		
91. Vagalat	X		
94. Butrint/ *Bouthroton*	X	X	
98. Paliomanastër	X		
101. Lia/ Babouri	X		
102. Chrysorrachi/ *Helikranon*	X		
105. Selo/ Kalaja e Selose	X		
109. Malçan	X		
114. Metoqi	X		
125. Melan/ Melanit Tekke	X		
129. Kalaja e Borshit/ *Panormus*	X	X	
131. Himarë/ *Chimaira*	X		
137. Saraginisht/ *Antigonea*			X
139. Labovë/ Paleokastra			X
149. Mavrovë/ *Olympe*	X		

Hammond pondered upon the grooves and corner drafting, arguing that they were cut either to use a plumb line or to hold the wooden drain pipes that were necessary to keep the earthen fill at the core of the wall dry, as moisture would cause the fill to swell. This would then push the facing blocks outward, and possibly cause the wall to collapse. He argued that drafted corners were connected to the last stages of Pyrrhos' reign (i.e., 280s–270s BC), while during the early years of his reign they would not have been used, as is evident in the walls of Antigonea, founded in 296 BC.[329]

[329] Hammond 1967, 584. Antigonea or Saraginishtë is number 137 in Appendix II.

Lawrence, on the other hand, argued that the earliest vertical drafting used in the turning points of walls was found in Samos during the 6th century BC. The outer corners of towers were commonly drafted, but were less frequent in the junctions of towers and curtains, as well as in the turns of walls. According to Lawrence, the drafting of the turns of curtains had become customary around the mid–4th century BC, and explained that both the grooves and drafted corners were guides for the masons to help maintain verticality during construction, by hanging a plumb bob from such, thus dismissing Hammond's drainage theory.[330] Of course, drafting a corner also has an aesthetic side to it, as such corners seem more pleasing and organized.

The presence or absence of drafting or grooves are very not helpful in dating a site. Argos Amphilochikon, dated to the last decades of the 5th century, as well as Saraginisht and Labovë, both products of the early 3rd century BC, lack both. On the other hand, many 4th-century sites with bulging quarry faced masonry, such as Kassope, Elea, and Nekyomanteion, as well as the late 3rd century BC tetrapyrgion of Malathrea and the lower enceinte of Bouthroton, all have drafted corners. The latter also has vertical channels in masonry.

Clamp holes in fortifications are not common in Epirus. I have personally seen these at two sites and found mentions of them at another four sites. Dovetail clamp holes designed to house hardwood clamps are visible in the semicircular battery of Gitana, described in detail in Paper V and Chapter 4.2. Each of the facing blocks has four clamps, two per side, tying the facing blocks together (Fig. 20). The ends of the radiating crosswalls in the fill have a single clamp tying the ends of the crosswalls to the facing. The other site is Kastri Rizovouni, described in detail in Papers IV and V as well as in Chapter 4.1. A single clamp hole is visible in the northeastern corner of tower T2, adjacent to the north gate (Fig. 21). The hole is identical to the ones in the Gitana battery.

Figure 20 Gitana, battery on Vrysella. Dovetail clamp holes in the facing blocks. Photo by M. Suha 2015.

[330] Lawrence 1979, 241–243.

Figure 21 Kastri Rizovouni. Dovetail clamp hole in the northeastern corner of tower T2. Photo by M. Suha 2014.

In the research literature, clamp holes are mentioned in Argos Amphilochikon, in the badly destroyed tower 7, flanking a gate or postern to its north.[331] Hammond described a possible clamp hole of undetermined shape that was 12 cm long and 9 cm wide, by 5 cm deep at Çuke.[332] He also mentioned very small clamp holes, 2.5 by 5 cm in size, in the Dema Wall, but again their shape was not described.[333] Dakaris mentioned some dovetail clamps in the thick, second phase walls at Paliorophoron.[334] According to Dakaris, these walls were dated to the latter half of the 4th century BC as repairs to the enceinte, following the capture of the settlement by Philip II in 343/2 BC.[335] Ley dated Argos Amphilochikon to the late 5th century BC, while the Dema Wall has been dated to the 5th or 4th century.[336] On the other hand, Çuke has been dated to the 3rd or 2nd centuries BC.[337]

[331] Ley 2009b, 37.

[332] Hammond's Çuke equates Çumpora/Çuke of Cabanes *et al.* 2008 and Giorgi & Bogdani 2012, number 113 in Appendix II. However, Giorgi & Bogdani describe an identical but more ruined site called Çuka, listed in Appendix II as 112.

[333] Hammond 1967, 99.

[334] Paliorophoron/Elatria, number 13 in Appendix II.

[335] Dakaris 1971, 174.

[336] 4th century by Çeka 1999, 67; 5th century BC by Giorgi & Bogdani 2012, 248–249.

[337] Giorgi & Bogdani 2012, 173–175.

4 FORTIFYING EPIRUS IN THE CLASSICAL AND HELLENISTIC PERIODS, AS SEEN IN PAPERS I–V

In a nutshell, the central issue across all of the articles was to examine the military architecture of the fortifications of the 13 Epirote sites and date them through comparisons (Fig. 22). The main methodological approach during the time of writing was through masonry types, the examination of the architectural and defensive features of the fortifications, and the comparison of such with matching examples from across the Greek world. None of the Epirote sites had any wall inscriptions or masons' marks to assist in dating. The ancient authors provide very few references to any of the sites, and those few mentions are ambiguous. Archaeological material, excavated first hand in 2005–2008, was only available in the cases of Agios Donatos and Kioteza, as discussed in Papers I and II. Unfortunately, in Agios Donatos the excavation of the tower only yielded a few finds from the time of its construction and original use as a fortification, while the vast majority of the excavated material consisted of Roman waste in connection with its later re-use.[338] As for Kioteza, the few badly eroded pottery sherds yielded by the excavation were not suitable for dating purposes. Thus, it was necessary to obtain the dating evidence using whatever other means possible. Papers III–V analyzed the fortifications solely through non-intrusive methods

Paper IV looked into the covering of gates and posterns, consisting either of false arches or corbelling, or more advanced, self-supporting vaulting or true arches, at seven Epirote sites: Kassope, Kastri Rizovouni, Nekyomanteion, Dodona, Doliani and Kastritsa. The paper also referred to the gates of Bouthroton, the only site on the Albanian side I have personally been able to visit.[339]

Paper V studied the different ways of enfilading evident in Epirus, which is the means of providing flanking fire to keep the vicinity of the fortifications clear of approaching enemies and their siege equipment. Different enfilading devices were studied through eight examples found on the Greek side of

[338] For an in-depth analysis of the excavation results (which were only also revealed to me at this stage), see B. Forsén & M. Suha, "Tower Stratigraphy on Agios Donatos", in B. Forsén (ed.) *Thesprotia Expedition IV. Region Transformed by Empire.* (PMFIA XXIV), Helsinki 2019, 299–316.

[339] In Appendix II, Kassope is number 14, Kastri Rizovouni 21, Nekyomanteion 18, Dodona 56, Doliani 62, Kastritsa 77 and Bouthroton 94.

Epirus: Kassope, Kastri Rizovouni, Dodona, Doliani, Kastritsa, Pyrgos Ragiou, Gitana, and Megalo Gardiki.[340]

Figure 22 The sites discussed in Papers I-V. 1: Agios Donatos (I, II, V), 2: Kioteza (II), 3: Elea (III, IV, V), 4: Nekyomanteion (IV), 5: Kassope (IV, V), 6: Kastri Rizovouni (IV, V), 7: Dodona (IV, V), 8: Kastritsa (IV, V), 9: Megalo Gardiki (V), 10: Doliani (IV, V), 11: Gitana (V), 12: Pyrgos Ragiou (V), 13: Bouthroton (IV). Map data ©2019 Google.

[340] In Appendix II, Pyros Ragiou is number 65, Gitana 63 and Megalo Gardiki 80. The other sites have been referred to earlier.

Despite the difficulties with the dating evidence, a picture of the development of fortifications in the area has emerged, which is described in the following pages. The first subsection covers the sites fortified during ca. 400–330s BC, the second during ca. 330s—300 BC and the third the fortifications originating ca. 300–220 BC. Each site is presented individually in chronological order, according to the initial date of fortification, thenmoving on to all stages of fortification on site, where the last stages in most cases took taken place during the late 3rd or the first half of the 2nd century BC.

According to the 4th century BC geographer Pseudo-Skylax, the majority of the Epirote tribes still lived in unfortified settlements in the 380s–360s BC.[341] The fortification of settlements took off during the decades around the mid-4th century BC, in conjunction with the sedentarization of the local tribes in ever increasing numbers. Some influence on fortification building must have transferred from Italy with the return of the veterans of Alexander the Molossian's failed Italian campaign in 331 BC and soon thereafter. The greatest boom in fortification building was during the reign of Pyrrhos and his immediate successors, ca. 300–250 BC. The latter half of this period also represents the wealthiest phase of Epirus, thanks to the rise in international sea-borne trade with Italy. After the mid-3rd century BC, troubles struck in the form of waning fortunes in trade, increased piracy, and hostile raids into Epirote territory, bringing about the last efforts to fortify and modify the pre-existing fortifications.

4.1 THE EARLY STAGES, CA. 400–330 BC

Kassope, studied in both Papers IV and V, has been regarded as one of the earliest indigenous enceintes in Epirus, built in a naturally advantageous position, on a high southward-opening plateau of Mt. Zalongo.[342] The flat plateau on which the settlement was built, has precipitous cliffs along the south side, backed by high mountains in the north, and is only approachable from the east and west. The east, south and west sides of the city were fortified by carefully built walls. The masonry is medium polygonal with a quarry face and tight joints, and the inner and outer faces of the curtains are bound by regularly spaced cross-walls. The curtains at the southwest still stand up to 6 m high along the outside face, preserved in their entirety up to the wall-walk level in places, as indicated by the level tops, only lacking the wall-walk slabs and parapet (Fig. 23). At the bottom of the curtain is a corbelled drain. Even though flooding has at some stage blown some facing blocks out, effectively doubling the channel's width, the well-built polygonal wall still stands

[341] Cf. Ps.-Skylax, 28–32: "...live in separate villages", (κατὰ κώμας).

[342] Assisted by Tommi Turmo, we documented the visible and accessible parts of the enceinte in May 2014 over three working days.

unaffected. The fortifications follow the edges of the cliffs and the enfilading for the walls is provided solely by the undulating trace of the walls, with several jogs facing northward.

Figure 23 Kassope, southwest sector of the west wall. The top of the curtain has several level-topped stretches, indicating that the curtains only lack the wall-walk slabs and the parapet on top. Looking southwest. Photo M. Suha 2005.

In the southern part of the curtain, cutting across the flank of a jog, is a tangential, northward-opening postern. It is a peculiar roundheaded tunnel cut into the undersides of large corbels facing each other, but there are also three voussoirs covering the spaces in between some of the corbels. The central seam between the two corbels can be discerned throughout, and no keystones are present, thus the structure must be classified as roundhead corbel (Fig. 24). The width of the corridor splays slightly from the inside out. No details on the presence of a wooden door, its jambs, or locking mechanism could be found.[343] The shape of the arch is accentuated in the facing of the curtain at both ends by a smooth band following the curvature, in order to differentiate it from the surrounding bulging masonry.

[343] Ley took note of the same in Acarnania: the roundhead-corbelled posterns G–J in the Long Walls of Limanaia have no means of closure. Stratos has four roundhead-corbelled posterns, four with a slab covering, and five other posterns with no indication of covering; all were 1.2–1.5 m wide and there was no indication of a closure mechanisms at any of them. Torybaia has three posterns with the slab covering intact, C, D, and G. None are closable. See Ley 2009a, 84, 164, 176, 270–271; Ley 2009b, 131, 377, 415–417, figs, 133–138, 494–496.

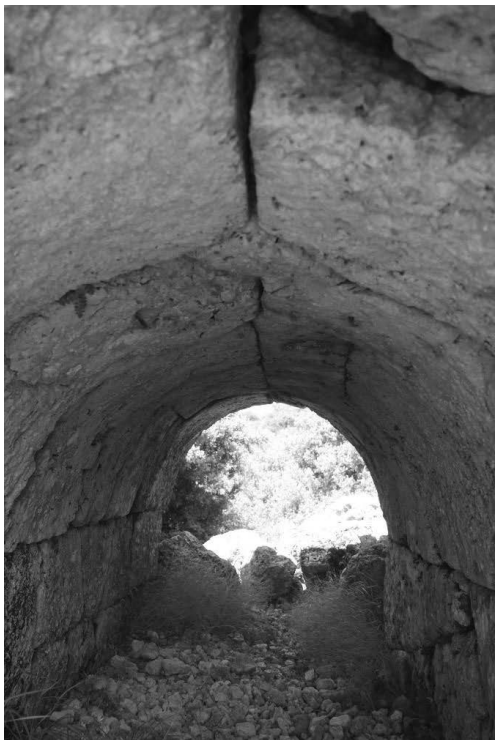

Figure 24 Kassope, the tunnel-like postern in the western curtain. Note the large opposing corbels forming the ceiling as well as some voussoirs set in between. Looking north. Photo M. Suha 2014.

To the north of the postern is the frontal, unflanked west gate, one of three in the enceinte. This is the best preserved, with remains of a true arch spanning a width of 2.92 m. While the masonry all around the gate is quarry faced, the corridor walls are tooled. The most important feature of the gate today are the slightly irregularly located springer blocks still in situ. The impost blocks below are quarry faced with a corner drafting but the springers are different. The facings of the innermost 45-47 cm of the springers are tooled but the outer edges of the blocks are left rough and bulging. These features indicate that the gate was originally covered by a segmental arch with a smooth vault facing that would have stood out from the adjacent masonry (Fig. 25). The arch consisted of 9–10 long voussoirs, each of an individual size.[344] The vaulting only covered a depth of a single block, and thus only supported the heavy stone parapet on top, while the rest of the corridor would most likely have been covered with timbers.

[344] Dornisch 1992, 42.

Figure 25 Kassope, the west gate seen from the outside. The arrows indicate the two springer blocks. View toward the east. Photo M. Suha 2014.

The fortifications have been dated by several scholars from 380 BC to "before 350 BC".[345] The walls, despite being built with very carefully cut masonry with regular compartment walls, are primitive in being only enfiladed by jogs. Naturally, the local topography favored the defenders in being very steep, so bringing rams to bear upon the walls or gates would not have been an easy task. The presence of both an untypical roundhead-corbelled postern with occasional voussoirs and an early true arch in the same sector indicates the early date of the fortifications.

Andreas Rathke studied the development and use of corbelling in the Greek world in his dissertation, according to which different shapes of corbels were popular in different areas and times, until being phased out, but were not completely replaced by vaulting. Rathke identified the first roundhead corbels at Selinous, Sicily in the late 5th century BC, while the latest was identified at Poseidonia in 275–250 BC.[346] Ley argued that the first roundhead corbels were in fact experiments of the Acarnanian masons at Oiniadai during the early 5th century BC. A couple of decades later in Acarnania very large roundhead corbels, such as the Avloporta at Palaiomanina, with a width of 2.45 m, were built. At around the same time the earliest true vaults were emerging, but in smaller openings. Corbelling was still frequent until the Hellenistic era.[347]

[345] First half of the 4th century BC according to Dakaris 1971, 189; 380–355 BC by Rathke 2001, 88–89; "before the mid-4th century" according to Dornisch 1992, 42–43.

[346] Rathke 2001, 149–152.

[347] Ley 2009a, 217–223.

Klaus Dornisch's dissertation on the development of vaulting in the Greek world argued that vaulting was invented independently at several locations. Long, tunnel-like barrel vaults emerged in Asia Minor, while in northwestern Greece, short frontal arches started appearing, the oldest being the west gate of Kassope.[348] Ley agreed with Dornisch's theory, dating the entire circuit slightly before the mid-4th century BC.[349] According to Ley, the barrel vaulted chamber tomb of Kassope (located in the southwest corner of the city) was also the oldest of *its* kind. The voussoirs used in the tomb ceiling are all of varying sizes, comparable to the roundhead-corbelled postern in the circuit.[350] Ley also argued for an independent northwestern Greek invention of vaulting, based on the strong local tradition of polygonal masonry. Thanks to their shape, polygonal blocks tend to form natural arches over each other. If the upper blocks are set above the central one in a radiating pattern like the spokes of a wheel, they act as voussoirs.[351]

Ley's reasoning on the independent emergence of the design, based on the polygonal masonry tradition is credible, and I agree with both her and Dornisch's early dating of both the enceinte and the true arch gate. I analyzed the features of the corbel, the arch, and the enfilading of the walls in Papers IV and V, and combined that with the comparanda in the fortification literature and the historical background to date the walls. My dating argument in Paper V was slightly different. Despite the convincing argumentation of both Dornisch and Ley, I was still hesitant to assign such an extremely early date to the walls and the arch. Instead, I was more cautious and downdated the enceinte to around the 340s BC at the earliest.

Today, upon re-evaluating the evidence, consisting of the architectural and structural features of the walls themselves, I have again reconsidered that dating. The curtains, built of quarry faced medium polygonal masonry, while not usable as a dating evidence, are nevertheless very common in 4th–3rd century Epirote fortifications. The masonry explains the existence of the still-existing corbelled water outlet in the bottom of the southwestern curtain.

The curtains are compartmented regularly at 2.4–2.8 m intervals, a trait frequently found in northwestern Greek fortifications of the latter half of the 4th century according to Ley. Further away, in Opountian Lokris, compartmented walls are present in Hellenistic circuits. Within Epirus, compartment walls can be found both in 6th–5th century BC Ambrakian walls, but also in the Pyrrhic walls of Antigonea.

The enceinte has no towers or bastions, and the only enfilading is provided by jogs, or an irregular indented trace, which was popular from the Archaic period down to late Hellenistic times. In Epirus, stretches of indented trace

[348] Dornisch 1992, 228–230.

[349] Ley 2009a, 225.

[350] Ley 2009a, 227–228; Dornisch 1992, 42–43, 235.

[351] Ley 2009a, 224–229. This is also evident in the blown-out drain at the bottom of the curtain, still standing despite the damage.

can be found in Lygia B, dated to the 4th century, Çuka e Aitoit dated to the 4th or 3rd century, and Paleomanastër, dated to the first half of the 4th century BC.

The corbelled, tunnel-like postern with intermittent voussoirs is unique in its appearance. A close relative, a short (shallow) roundhead corbel was a popular form until the third quarter of the 4th century.[352] Finally, there is the most important feature, the true arch of the main gate that was dated by both Dornisch and Ley to around the 350s BC. Based on these features, I would now date the fortifications of Kassope to around the mid–4th to the third quarter of the 4th century BC, but would not narrow the dating down to any particular decade.

Historically, it is known that the end of the 340s BC saw a major upheaval in southern Epirus with Philip II conquering the four Elean colonies, all located within 4.6–16 km from Kassope. While the colonies of Boucheta, Elatria, and Pandosia are specifically mentioned, the fourth, Batiai, is not. The omission could mean that the site was not fortified at the time of the conquest, requiring no siege operations. Currently the site is known as **Kastri Rizovouni**,[353] which was studied in Papers IV and V.[354] The circuit is located some 4.5 km southeast of modern Thesprotiko on a hill joined to its neighbors by a wide, thickly wooded saddle in the northeast. The enceinte is somewhat trapezoidal or crescent in shape, its long axis running from southwest to northeast. The fortifications circle the hill on all sides, enclosing an area of ca. 10.1 ha (Fig. 26).

The strongest defenses were located along the northeast, with six large rectangular towers T1–T6, and one jog, while access was provided by one small frontal gate adjacent to T2 and three identical posterns adjacent to T3, T4, and T6. The southeastern sector is defended only by a single small tower T7, with a postern and a large rectangular battery in the southernmost tip, but the battery could not provide any enfilading to this sector due to its placement. In the west and the northwest sectors there were no enfilading structures except for two large tangential gates, one opening toward the south and the other toward the northeast. The fortifications were built of carefully cut quarry faced trapezoidal and polygonal blocks. All corners had drafting, and several drains are visible in the northeastern curtain.

[352] Rathke 2001, 149-152. For short semicircular corbels, see the description of Kastro Rizovouni.

[353] An alternate spelling is **Kastro** Rizovouni.

[354] I documented the circuit in May 2014 assisted by Tommi Turmo, over a few working days, and revisited the site the next year to obtain a clarification on some issues and take additional photos.

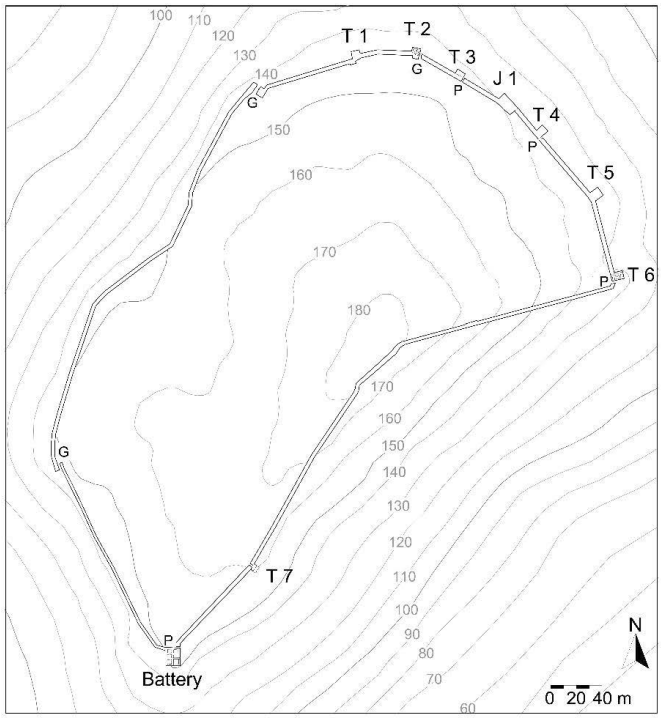

Figure 26 Kastri Rizovouni, plan of fortifications. Towers are indicated by T, the jog by J, gates by G and posterns by P. Map by M. Suha 2014

The tangential main gate is located at the northwestern corner, between a thick stretch of curtain to the northwest and a rectangular thickening of the curtain[355] on its other side. The corridor is 6.74/7.04 m long and 3.0–3.04 m wide, constricted to 2.6 m by a pair of 0.6 m thick jambs at a depth of 2 m, behind which the gate would have stood. The area is badly overgrown today, but in front of the gateway there is a large pile of huge fallen blocks originating from the gate and its covering (Fig 27). One of the blocks is a very long slab, rather flat and quadrangular, in addition to which there are at least three very large blocks, with clearly curved sections.[356]

[355] During the visits in 2014 and 2015, it was not possible to discern what the quadrangular structure was, whether it was a bastion, tower, or just a thickened stretch of curtain, due to the thick vegetation cover.

[356] The slab measures 1.9–2.05 m long (L) by 0.56–0.65 m wide (W), its thickness (T) was unobtainable. The block on the left, L=1.17 m x T=0.8 m, the uppermost block L=1.6 m x T=0.82 m x W=0.72 m. The largest block of all, on the right, is 2.28 m long, of which the curving underside is 1.18 m. Thickness and width could not be measured.

Figure 27 Kastri Rizovouni, the pile of blocks originating from the northwest gate, obscured by the vegetation in the background. In the front is the long slab, surrounded on all sides by blocks with curved sections. Looking toward the southeast. Photo M. Suha 2015.

Based on the blocks in the pile as well as the standing remains, I argue that the gate was covered by a very large semicircular corbel arch or rather a semi-corbel with exceptionally large concave consoles and topped by the long slab (Fig. 28). A still-standing parallel with a practically identical width is the Avloporta at Palaiomanina, Acarnania.[357]

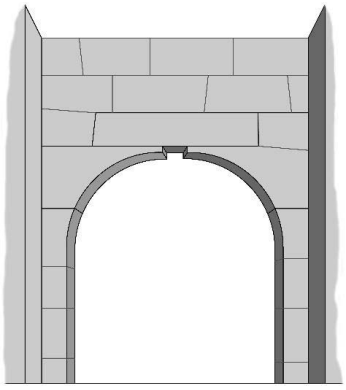

Figure 28 Kastri Rizovouni, main gate. Hypothetical reconstruction of the corbelled gate covering as a semi-corbel with very large consoles. Illustration by M. Suha 2015.

[357] Cf. Ley 2009a, 91–95; Ley 2009b, 163–165, figs. 187–193.

The frontal, much narrower north gate was located to the east of a somewhat irregular rectangular tower T2. Located at the outer edge of the corridor, the now broken two-piece corbel arch, 1.6 m wide, would have spanned the opening slightly askew in relation to the side walls. Just behind the remains of the corbel, on both sides, are a pair of grooves 10 cm wide by 5–10 cm deep (Fig.29). The groove on the western side is clear, but that on the other side is faint. These *could* represent remains of a portcullis, but are more likely just grooves for a plumb line used during the construction. One half of a threshold with cuttings for the jamb footings, the pivot, and vertical locking bolts had at some stage been removed from the gate and was lying nearby.

Figure 29 Kastri Rizovouni, north gate. A groove in the side wall of T2, in the bottom, just behind the corbel arch, at left, below the scale bar. Photo M. Suha 2014.

Two of the following three posterns, east of towers T3 and T4, are still covered by intact semicircular corbels ca. 1.3 m wide. Only the outer facing, ca. 0.5 m thick, had corbelling, while the remainder of the corridor was covered by stone slabs.

Tower T2, which protected the north gate, had internal crosswalls in the projecting part. The masonry course in the front of the tower at about waist level lacks the northeastern corner block. Its still present neighbor has a cutting for a wooden dovetail clamp, the only one visible in the whole enceinte (Fig. 21). Unlike the others, the northeastern corner tower T6 was not obscured by the lush vegetation on site, revealing the internal crosswalls and the filling consisting of head-sized stones and soil. The crosswalls divided the fill into six compartments: four in the projecting part and two in the curtain behind. The tower is clearly contemporaneous with the curtain, as the crosswalls bind everything together. The other towers most likely had the same structure, but as the site is entirely covered by thick vegetation, observations along the tops of the walls and towers were limited. The only tower in the

southeast, T7, is of modest size and all but destroyed, but traces of the crosswalls dividing its fill into four compartments are present (Fig. 11).

The large battery at the southern tip was built entirely of polygonal masonry, and still shows remains of its fighting compartment floor and the chamber walls above, although both are now obscured by a later mortared structure on top. Although the southern portion of the battery has collapsed, it is still possible to reconstruct it as having been ca. 11 m wide by 14 m deep. The slabs of the fighting compartment floor jut out from the masonry below and above, being a decorative element that is also visible in some Acarnanian fortifications.[358] The filling of the battery, consisting of head-sized rocks and no soil filling, is intermittently visible beneath the crumbled mortar structures, which were divided into six compartments by crosswalls reminiscent of tower T6.[359] As the battery stands on a slope, the floor of the chamber at the northern, uphill edge is located at an altitude of only some 2.4 m above the ground, 4.9 m at the collapse, and perhaps some 6 m at the original location of the south wall. Immediately behind the battery is a frontal postern, and in its north jamb, opening toward the field, is a rectangular niche (Fig. 30).[360]

Figure 30 Kastri Rizovouni, south tip. On the left is the battery. Note the second course from the top, with projecting slabs forming the chamber floor. Behind the bush in the middle is the postern, the niche is on the right. Photo M. Suha 2014.

[358] Cf. Palairos, Tower 2 with almost identical dimensions, described in Ley 2009a 135–136, 141, pl. XXXV, 2; Ley 2009b, 268–273, figs. 356–366.

[359] See also J2 at Agios Donatos and the tower/bastion at Kioteza, to be described in Chapter 4.3.

[360] Cf. Hammond 1967, plate II c. In Hammond's description of the photo there is an error, claiming that the photo depicts the north gate beside T2.

Earlier research has given various dates for the enceinte, from 375 to the 230s BC. Hammond argued for a very late date of 280–230 BC; on the other hand, Rathke suggested an early date of 375–325 BC.[361] Dakaris favored a date after 343/342 BC, which would explain the omission of the site in the list of conquered Elean colonies as an unfortified site would not have required an assault.[362] Based on the features described above, the comparanda in the literature, and historical events, I agreed in Paper V with Dakaris' dating of 343/342 BC or soon thereafter. The site would be roughly contemporary or just a few years younger than Kassope with its tunnel-like postern and early true arch. The differences in corbelling are most likely explainable by the utilization of different masons.

After re-examining the dating evidence upon writing this Preface, I am still inclined to believe in Dakaris' dating, based on the following features and their parallels in nearby Acarnania.

In general appearance, the circuit seems more advanced than Kassope because of the utilization of several large towers at reciprocal distances of 32–62 m. The towers are solid-based and their coarse stone filling is compartmented. According to Ley, such towers were used in northwestern Greek fortifications already by the latter half of the 5th century. Stratos is a good comparison with regard to the spacing and the size of the towers and the presence of the crosswalls within. Furthermore, the dovetail clamp cutting in the corner of T2, next to the north gate has an interesting parallel in Stratos, where all the towers *in connection with posterns* had dovetail clamps in their corners. The first fortification phase of Stratos was dated to the third quarter of the 5th century, and the second phase to the end of the 4th century BC.[363]

The still intact roundhead corbelled posterns have matching parallels in the Long Walls of Limnaia, Oiniadai, Stratos, Astakos, Koronta and Phoitiai, all of which were dated to between the first half of the 5th and mid–4th centuries BC.[364] Rathke, in his dissertation, came to the conclusion that the last roundhead corbels were built during the third quarter of the 4th century BC.[365]

The covering of the northwestern gate could most likely be reconstructed as a large semi-corbel with very large concave consoles, topped by a large slab, which is comparable to the Avloporta at Palaiomanina, dated to the mid–5th to mid–4th centuries BC.[366]

The niche adjacent to the south postern most likely held the cult image of a deity protecting the gate. Ley stated that such niches at or near gates were common all over the Greek world in all periods. In Acarnania, she described

[361] Hammond 1967, 659; Rathke 2001, 89–90.

[362] Dakaris 1971, 32, 50–51, 140–141, 148–149, 185, 189.

[363] Ley 2009a, 159, 163-164, 167.

[364] Ley 2009a: 64, 76, 84, 101, 108, 145, 148–149, 164; Ley 2009b, 57, 97, 274–276, p.212–213, 321, figs. 48, 136–137

[365] Rathke 2001, 153.

[366] Ley 2009a, 93–95.

niches at Derion, Oiniadai, and Torybaia, all of which were dated to between the first half of the 5th and late 3rd century.[367]

These features all point to a mid–4th century date. Bearing in mind that the site was not mentioned as having been conquered in 343/342 BC, the walls could best be explained as having been built soon after the change of ownership.

Elea is the major settlement in the Kokytos Valley, some 33 km to the northwest of Kastri Rizovouni. The settelement is located on the eastern foothills of the Paramythia range, some 4.5 km south–southeast of modern Paramythia. The fortifications of Elea were studied in Papers III and V.[368] Paper III concentrated on the masonry of the fortifications and the dating of the walls, while Paper V analyzed the enfilading of the walls and the possible armaments utilized by the defenders.

The settlement, measuring some 190–240 m from south to north by 500–550 m east to west on a high westward-jutting plateau at an altitude of 550–460 m a.s.l., is surrounded intermittently by stretches of massive polygonal walls alternating with unwalled sectors with steep cliffs. The total circumference of the enceinte is ca. 1.4 km, surrounding an area of some 10.5 ha.

The main fortifications in the east are remarkably straight, with very limited enfilading (Fig. 31). Built at the southern tip of the curtain is a large reverse battery. Running across the structure are the blocks of the original inner curtain; the addition inside was built of extremely crude masonry with very large gaps between the blocks. Being reversed, the battery adds nothing to the enfilading of the curtains, but could have boasted a powerful array of heavy stone-throwers capable of controlling the approaches to the walls. Most of the curtain and the eastern gate within were only enfiladed by a single modest jog some two thirds along its length from the south. The frontal Eastern gate is 2 m wide and still wholly intact, being covered by large lintel slabs, one of which was repaired recently. In the corner of the eastern and northeastern curtains is an irregular quadrangular tower.

[367] Ley 2009a, 66, 100–101, 105, 108–109 176–177 and 273.

[368] I documented the eastern walls in July 2010 assisted by several people: Esko Tikkala, Richard Forsén, Anna Ylitalo, and Sarita Sandell. As this was the first site I measured using a total station, the progress was slow, and the few evenings I could use the instrument on site only allowed for greatly reduced documentation, so the other features of the circuit, a separate stretch of curtain in the northwestern corner and the main gate on a lower plateau in the southwest, had to be left out.

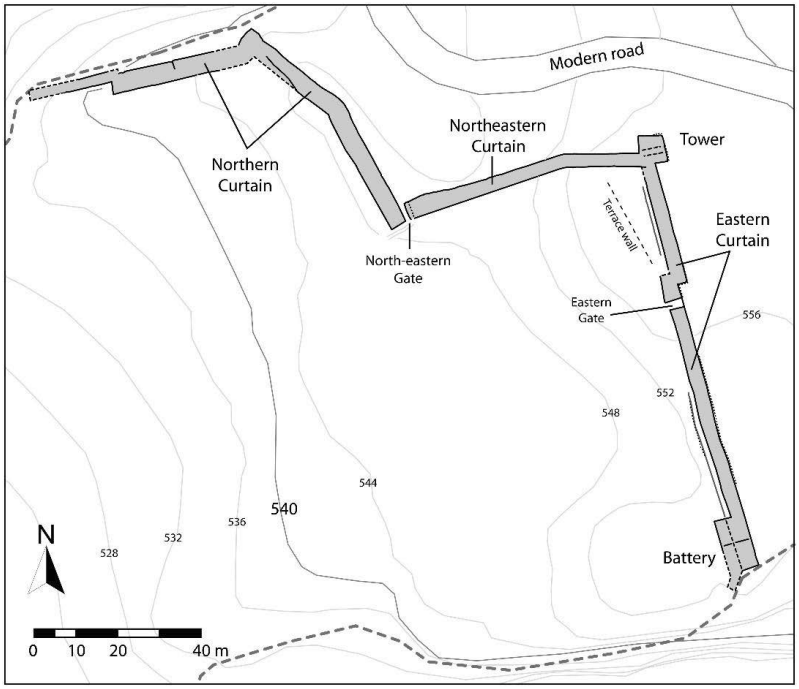

Figure 31 Elea, plan of fortifications. Plan by M. Suha 2010.

The northeastern curtain running westwards from the tower to the northeastern postern[369] has a slight bend approximately one third along its length from the east. The postern is at the junction with the north curtain, which provides enfilading to the frontal entrance. The north curtain, running to the northern edge of the plateau also has a slight bend halfway along its length. The curtain then turned west, following the northern cliff face. At the turn of the curtain, there is a chevron shaped "jog".[370]

In some places the curtains are still approximately 7 m high, displaying three differing wall thicknesses: 4.9 m thick at the foundation level; 4.6 m at the lower part of walls, and ca. 3.1 m at the top (Fig. 32). The style and appearance of masonry correspond to the changes in wall thickness, indicating that some changes in the building process took place in the middle of the building process.

At the bottom of the eastern curtain and the corner tower one can see the level-topped foundation projecting ca. 10–20 cm from the wall facing. In the

[369] In Paper III, 320–321, this opening was called the Northeastern Gate, based on the masonry. I argued that it was originally a proper gate with a width of 2.2 m. This has since been proven wrong, see below.

[370] Such a modest flank could not have really protected the wall on the cliff edge, but on the other hand, the space in between is very limited, reducing the risk of enemies utilizing this as a means of entry.

southern half of the east curtain, south of the East Gate, the foundation is visible, projecting from both the inside and outside facings of the lower wall. The top of the levelling course runs along the same altitude on the inside, where it spans a depression between the reverse battery and the gate, and on the outside, where it traverses flat ground.[371]

Figure 32 Elea. Differing thicknesses of the eastern curtain walls. Seen from the reverse battery, looking north. Photo M. Suha 2010.

While the masonry throughout the enceinte is polygonal, the appearance of the masonry and joints between the blocks differed greatly in different sectors, both in the horizontal and vertical plane. First, there is the masonry in the lower parts of the curtains, which consists of several differing kinds of masonry.[372] Starting from the south, the lowest parts of the external facing are built of tooled faced blocks with gaping seams. Slightly to the north of this, the blocks are smooth faced but slightly more quadrangular and oblong in shape. Several are keyed (i.e., are somewhat L-shaped). Most of the joints are still wide open, but the largest gaps are occasionally stuffed with small plug stones of either a quadrangular or triangular shape. Some horizontal seams continue straight for considerable distances. The corresponding inside face masonry consists of blocks with a bulging quarry face and wide joints. The additional

[371] In Paper III, 314, I erroneously claimed that the top of the foundation on the inside would have been located on a lower level than on the outside due to a measuring error. Christos Spanodimos has since corrected the issue in a personal e-mail on 15.5. 2019.

[372] Today I am aware of the difficulties associated with masonry types. However, despite the difficulty of utilizing them in dating the walls, they are still useful in classifying and describing the different examples of masonry encountered.

inner masonry of the reverse battery has even cruder, gaping joints between the blocks.

North of the gate, a level-topped foundation course is still visible, rising well above ground in the vicinity of the jog. The blocks are quadrangular, their facing consisting of a bulging lower part and a wide tooled band up to 30 cm wide along the top. At the jog and continuing northward, there is a single course of rectangular blocks some 50 cm high. Some of the blocks have a smooth face throughout, while the majority have very wide tooled margins surrounding a rough central bossing. Above this course are two huge, nearly quadrangular blocks that make up the whole jog. The block on the flank side is some 2.3 m long by 1 m high, and the other has similar dimensions. Both have very wide tooled margins surrounding extremely bulging central bossing. In the corner, between the gate and the jog is the largest block on site, is a ten-faceted block measuring ca. 2 x 2 m (Fig. 33).[373]

Figure 33 Elea. Peculiarities of the masonry in the vicinity of the East Gate and the jog. The scale bar rests on the leveling course. View toward the west. Photo M. Suha 2010.

Between the jog and the tower, just above the regular ashlar-like masonry, is a continuous course of large irregular blocks, most of which have smooth margins and a central bulge. Above these are occasional stretches of oblong blocks with tooled faces. In this sector the joints are narrow and carefully cut, unlike in the southern sector.

The upper part of the whole curtain is very different, only 3.1 m thick, built of well cut, quarry faced polygonal masonry of medium size and tight seams. Although covered by vegetation at the time of my visits, some compartment walls were intermittently visible in the upper part of the masonry at distances of ca. 3 m. The change in masonry type and the wall thickness clearly correlate.

[373] In Paper III, 326–327, I claimed that the block had nine sides. This is a mistake, as there are ten.

The change is sudden, resulting in an irregular, undulating joint between the two. In some places, the thick walls had reached considerable heights, while in others the walls had barely started to rise when a different masonry type was implemented.

The northeastern curtain had different kinds of masonry in the lower part of the wall on either side of the bend. In the east, between the tower and the bend, the masonry is reminiscent of the type used in the previous sector. From the bend onward, the masonry consists of somewhat more rounded, bulging blocks with fairly open seams reminiscent of the masonry in the south of the previous curtain. Adjacent to the northeastern postern, there are two very large blocks with wide tooled margins surrounding a shallow central rustication that is reminiscent of the blocks in the vicinity of the East Gate and the jog. The upper masonry is again the neat medium polygonal as described above. Inside, the masonry is somewhat similar, but with less careful, loose seams. Several vertical grooves are cut into the outer face masonry, including a crooked one at the bend.

In Paper III, the entranceway located in the junction of the northeastern and northern curtains was called the Northeastern Gate (Fig. 34), based on my analysis conducted in the summer of 2010.[374]

Figure 34 Elea, northeastern postern. The huge block on the left has a smooth side, visible beside the scale bar placed on the supposed later reduction of the gate. Additionally visible are the supposed threshold block(s) below. View toward the south. Photo M. Suha 2010.

[374] Paper III, 320–321. See also Notes 369 and 392.

Back then, I noted that the huge quadrangular cracked block to the east of the opening seemed to indicate an existence of an earlier wider gate there.This was because the corridor side of the block was perfectly smooth, tooled faced, and partly obscured by much smaller blocks. On the ground level, at the outer edge of the corridor, there were two flat blocks with their upper surfaces on the same level, resembling a two-piece threshold, as if partly obscured by an additional walling. These features led me to argue that the tooled side of the huge block would have represented the original side wall of the gateway, which was 2.2 m wide. This would then have been remodeled as a postern by reducing the width of the corridor by an additional wall built of much smaller blocks. This interpretation has since been proven erroneous. The eastern side of the gateway was excavated in October 2018 and yielded no evidence of an earlier, wider side wall of the gateway.[375] Thus, this opening has been a postern 1.2 m wide right from the start.

The northern curtain is in very bad condition, forming a wide, low mound for most of its length. The projecting, smooth-topped foundation course can be intermittently seen. The masonry in the lower part consists of oblong blocks with tooled faces. At a quick glance, the joints between the blocks appeared to be loose due to the irregular beveling of the margins, but were in fact tight slightly deeper.[376] The scanty remains of the upper part revealed that the masonry was again of the same style as elsewhere.

Paper V concentrated on the flanking devices of the enceinte and the possible weaponry utilized by the defenders, noting that the enfilading was poor and, as such, rather primitive. The jog adjacent to the East Gate had a flank of only 2.3 m, allowing for only a few defenders wielding hand-held weapons such as bows, hand-thrown stones, and javelins to man it. Thus its sole purpose would most likely have been to protect the East Gate.

The tower in the corner was also built on top of a projecting footing course. The tower was filled with earth and rubble up to the wall-walk level, and it is possible that it had internal crosswalls although the vegetation on top prevented any confirmation. The masonry consisted predominantly of very large tooled faced ashlar and trapezoidal blocks, which alternated with some polygonal blocks showing both tooled as well as quarry faces. One tooled faced ashlar in the lower courses of the tower is peculiar, approximately 2.4 m wide by 0.9 m high, with a beveled underside and a 15 cm wide, smooth faced ledge projecting some 5 cm along the top. The tower has a total area of 36.8 m², thus with a wall thickness of ca. 0.5 m the floor area would have been only some 26 m². While there might well have been another chamber of similar size above the first, each one could have housed only the smallest caliber catapults if any. On the other hand, only catapults and composite bows would have been

[375] C. Spanodimos, e-mail, 15.5.2019.

[376] Cf. the masonry in Labovë, number 139 in Appendix II. The seams of the blocks are somewhat similar, but the shape of blocks in Labovë was more regular ashlar. More on Labovë in Chapters 3.4.2 and 3.5.

capable of enfilading the entire 100 m stretch southward to keep the vicinity of the eastern curtain free of enemies. Three of the smallest caliber catapults per chamber is the maximum armament. Using older style tension machines, either hand-held *gastraphetai* or pedestal-mounted "standard catapults" shooting either 1.1 m long bolts or ca. 1.5 kg stone shot would be possible. If the machines were newer, more efficient torsion catapults, the armament could have consisted of either three 1.5-cubit bolt-shooters firing sharps ca. 70 cm long, or stone shooters discharging 24 drakhma shot, weighing 105 g, using Tracey Rihll's new estimates.[377] The reverse battery in the south tip could not enfilade anything, but could have housed a formidable array of artillery in a weatherproof chamber. Four ten-mina stone-shooters discharging roughly tennis ball-sized 4.4 kg shot could have been among the possible weapons.

Dakaris dated the enceinte to the mid-4th century BC, based on historical events and coins found on site by 1971.[378] In their guide book of 2007, Riginos and Lazari dated the fortifications to the first half of the 4th century BC and argued that the seat of the Confederation of the Thesprotians was centered in Elea before its transfer to Gitana around 335 BC, based on the two Elean bronze coinages of 360–342 and 342–335 BC.[379]

The dating presented in Paper III was largely based on masonry typologies and their relative chronologies utilizing Randsborg's 2002 typology of Kephallénian walls. In the lower parts of the walls, the tooled faced, rather quadrangular and more oblong blocks with wide, careless joints were comparable to Randsborg's Type 13.[380] The tower had its own masonry, using mostly irregular ashlar and trapezoidal blocks with a tooled face. The closest parallel is Type 17.[381] Used in the lower parts of the northern curtain, the smooth faced rather oblong blocks differed from the ones described previously as they had tighter joints than those previously encountered. This masonry is comparable to Type 16.[382] On the inside facings of the curtains, the masonry is comparable to Types 7 and 8.[383] The inside of the battery, with its very crude masonry and gaping seams, was compared with Type 4.[384] The narrower, more compact, carefully cut and fitted, quarry faced masonry with very tight joints

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[377] Rihll 2007, 290–292.

[378] Dakaris 1971, 37–39, 99. The mentioned coins are Elean, dated ca. 360–340 BC, a Kassopaian coin of 343–330 BC, "4th century BC" coins from Corcyra, Corinth and one of Philip II of Macedon.

[379] Riginos and Lazari 2007, 25–28.

[380] Randsborg 2002, 227, figs. IX, 27–28. The type was dated roughly to the 4th century.

[381] Randsborg 2002, 231–232, fig. IX, 33–35. Cf. especially fig. IX, 35, the illustration of a monumental tomb in Lykian Apollonia with the tower. Randsborg dated the type loosely to the Classical era.

[382] Randsborg 2002, 228–231, figs. IX, 31–33. This type was dated by Randsborg to 300–275 BC.

[383] Randsborg 2002, 216–221, figs. IX, 12–17. Randsborg dated Type 7 to the 4th century and Type 8 to 300–275 BC.

[384] Randsborg 2002, 214, fig. IX, 8. Randsborg assigned a very vague date for this type, from Late Archaic to the Late Classical or even Hellenistic period.

that formed the uppermost parts of the walls is comparable to Type 11.[385] For the most monumental masonry style found in the vicinity of the East Gate, Randsborg's typology had no parallels. Therefore, I compared the huge blocks with very wide smoothed margins and profound central bossing to the much smaller blocks found near Gate C in Gortys.[386]

To complement the masonry typologies, other features were taken into account. The fortifications were based on a passive defensive strategy with very limited enfilading capabilities. There were only two openings from which to conduct sallies. The circuit had only one tower of very limited size, albeit in the most commanding location. The tower walls were most likely around one cubit or roughly 0.5 m thick, which would have been comparable to the parapets. Josiah Ober argued that the "first generation catapult towers" of 375–325 BC had such single-block walls, as the attackers lacked artillery with which they could damage the walls. The "second generation" chamber walls of 325–285 BC were more massive, built with two faces of masonry with a thickness of 1.1–1.7 m to withstand catapult bombardment.[387] The masonry in the lowest portions of the walls was predominantly flat faced with rather wide joints, a dangerous combination if the enemy had rams or catapults at their disposal. To offset the danger, the walls with such masonry were also excessively thick. Of course, due to the topography, any enemies would have had a difficult time moving all the necessary siege equipment up to attacking positions in the first place.

Furthermore, the site and design of the enceinte are both reminiscent of a *Geländemauer* type of site. In such, the walls follow the most defensible topography, as a result of which the circuit could be flung over a huge area with considerable stretches of empty space within. Such circuits were popular in the 5th and 4th centuries BC.[388] Elea is just such a settlement, with a ca. 200 m stretch of uneven, unbuilt land in between the fortifications in the east and the agora at the center of the settlement. Based on all of these factors, I dated the thick walls roughly to the mid-4th century but again hesitated on too early a date in Paper V, arguing for the 340s BC as being the most likely.

The difference in the masonry in different sectors can be explained by the presence of several gangs of masons working simultaneously, each responsible for their own stretch of wall and working according to their own traditions. The work would have progressed at different paces at different locations along the enceinte. When some sectors had reached a great height, the work had barely begun in others, when all of a sudden, all universally switched to a new

[385] Randsborg 2002, 222–227, figs. IX, 21–26. Randsborg dated this to 350–275/200 BC. It must be noted that most of his parallels are in fact Epirote sites described in different sources of the time: Kassope, Gitana and (Kastro) Rogous.

[386] Martin 1947, 106, 129, 138, fig. 12. Martin dated the walls to early 4th century BC. Maher 2012, 492 agrees with the dating.

[387] Ober 1992, 151, 161–162.

[388] Winter 1971, 111.

kind of masonry. Instead of building excessively thick walls with dangerously open seams, the new much narrower curtains now consisted of carefully cut quarry faced polygonal blocks of medium size, which would have been easier to lift and move about.[389] The joints were now tight, and the rough quarry facing of the blocks helped deflect enemy bombardment before they damaged the joints. The narrower new type curtains were further braced by compartmenting at ca. 3 m intervals.

Apparently, the knowledge of heavier artillery had reached the builders, necessitating the sudden change. The development of catapults had taken a leap with the invention of a new kind of much more powerful torsion spring. Traditionally, this has been traced to the Macedonian engineers of Philip II around 340 BC, but according to Rihll the earliest concrete evidence of such can be traced to sometime between 338 and 326 BC. While heavy tension spring catapults were already capable of discharging stone shot by 350 BC, stone-throwers, in general, were first mentioned in connection with the siege of Halicarnassus in 334 BC, and explicitly against walls during the siege of Tyre in 332 BC.[390] As the walls could not have been left unfinished for long periods of time, the change most likely took place around the 330s BC.[391] At a later stage, the southern tip of the main curtain was modified. The first 13 m stretch of the 4.6 m thick lower wall was almost doubled in thickness to 7.1 m, to form a large reverse battery. The masonry of the extension was coarse with gaping seams. It was most likely added to the pre-existing walls during the troublesome times in the late 3rd century BC, or even as a consequence of the Illyrian and Aetolian raids into Epirus between 230 and 217 BC.[392]

After re-analyzing the aforementioned evidence while writing this, I would re-phrase the dating slightly, not tying it down to any particular decades. Now, I would just state that the original thick walls should most likely be dated to the third quarter of the 4th century BC, and that the second phase thinner walls should be considered as belonging to the same general period. The reason for the change in masonry was most likely the utilization of a different kind of stone, yielding smaller, "medium polygonal" blocks, that could be maneuvered into place more easily. To add to the stability of the narrower walls, the joints were now carefully shaped and tight, and the wall faces were connected with regular compartment walls.

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[389] According to Ley 2009a, 200, an average quadrangular block used in Acarnanian fortifications had dimensions of 0.6 x 0.6 x 0.85 m and weighed some 550 to 800 kilos, while polygonal blocks with comparable dimensions of 0.6–0.8 m each way, weighed some 500 kg.

[390] Rihll 2007, 78, 85–86.

[391] Again, my opinion on dating has changed since Paper III, 337–338, where I argued for a date from 340s to 330s for the first phase and a date in the last quarter of the century for the change. However, such a long period of time with unfinished walls is inconceivable.

[392] I argued in Paper III, 320–321, 338, that the reduction of the Northeast Gate by one meter would have taken place at this stage. However, as already mentioned, this was a misinterpretation.

At around the middle of the 4th century BC the fortifications of **Doliani**, identified as ancient Phanote, were also being built. The enceinte was discussed in Papers IV and V. The 5-hectare settlement is located in a sharp bend of the Kalamas on a hill with a relatively flat top, approximately 8.5 km east–northeast of Igoumenitsa (Fig. 35).

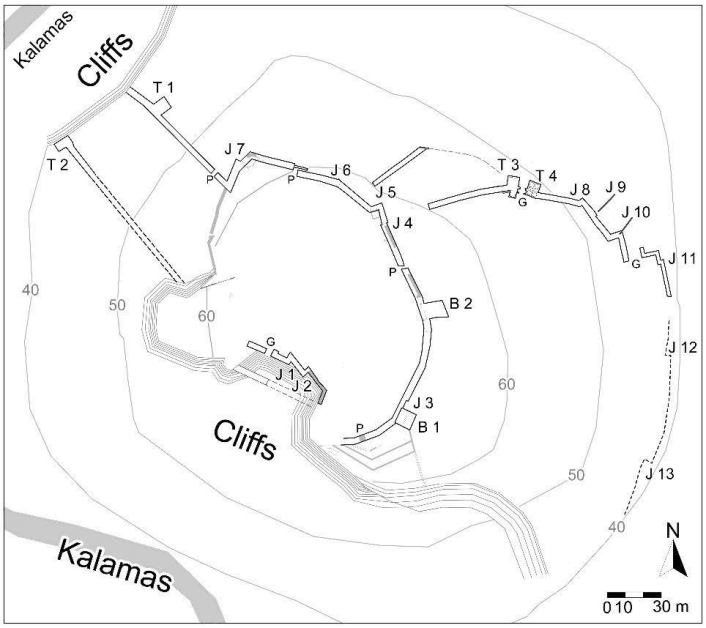

Figure 35 Doliani, plan of the fortifications. Jogs are indicated by J, towers by T, gates by G, posterns by P, and batteries by B. Map by M. Suha 2014 after the CAD data of the Ephorate of Antiquities of Thesprotia.

The west and south cliffs on the river are precipitous, while towards the north and the east, the land slopes gently. The summit of the hill is surrounded by the acropolis circuit, a continuous line running from the southwest corner to the northwest. The wall then turns sharply toward the northwest, running in a ruler-drawn course to the edge of the western cliffs. This straight wall is the northern spur wall. The acropolis is defended by two large quadrangular batteries B1 and B2 in the east, while a rectangular tower T1 protects the spur wall near the western cliffs.[393] Further enfilading is provided by jogs J5 and J7, while small offsets J3, J4 and J6 merely stiffen the walls. Four posterns are located in the walls. A separate short wall with two jogs, J1 and J2, and a gate

[393] While writing Paper V, I failed to notice that this tower has crosswalls, described by Dakaris 1972, 155, According to Dakaris, the projecting part of the tower is 7.35 m square and divided to compartments by "walls in the shape of a cross". They are also visible in the new Google Earth images. The projecting part is divided into four compartments but as the curtain behind it has disappeared it is impossible to say whether there were more compartments there.

guard a gully in the southern cliffs,[394] but otherwise the precipitous landscape requires no walling. In the west, another straight wall with a wide but rather shallow tower T2 facing northwestward runs parallel to the northern spur wall between the cliffs and the acropolis. On the gently sloping ground to the east and the northeast of the acropolis lies the lower town. In the middle of the lower curtain wall is the main gate of the settlement, flanked by large rectangular towers T3 and T4, the only ones in the whole lower circuit wall. Aside from these, enfilading was achieved merely by jogs. In some sectors the masonry consists of flat and narrow slabs, while in others the masonry is normal ashlar and trapezoidal, with quarry face in all. The corners have drafting.

The most noteworthy feature of the site is the arch-covered main gate. The frontal gate opens towards the north between two large towers. The eastern tower has the remains of crosswalls dividing the fill into six compartments. The other is obscured by later structures, however I would consider the existence of crosswalls within to be very likely. The stilted arch 0.7 m deep is atypical in consisting of five voussoirs of alternating lengths that rise from two rectangular blocks with decorative rounded projections on the inside reminiscent of the concave consoles of a corbel.[395] The vault facing is smooth throughout.

Hammond dated the walls to the 280s–230s BC, while Dakaris dated both the acropolis and the lower town circuits as contemporaneous, mentioning that probable late 5th century and 4th century BC sherds were found on site.[396] Kanta-Kitsou and Lambrou dated both enceintes to the latter half of the 4th century BC.[397]

At the south side of the acropolis circuit, the stretch of walling with two short–faced jogs in close succession crossing a gully is reminiscent of the indented trace in Samikon, crossing a depression between two hillocks. The enceinte of Samikon is most likely an early–4th century BC product.[398]

Based on the masonry, the presence of two large towers or batteries, some with compartment walls, the preference for jogs over towers in the lower town walls, and, most importantly, the true arch consisting of alternating long and short voussoirs and console-like decorative blocks below, I agreed in Paper V with the dating of the latter half of the 4th century BC, which makes it roughly contemporaneous with Kassope, Kastri Rizovouni and Elea. This is still my view.

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[394] Cf. the siting of the indented trace in Samikon, crossing a gully between two hills.

[395] Typing error in Paper IV, 19. In the text the blocks on which the arch stands are called springers. Strictly speaking, these blocks are neither springers nor imposts. In a typical stilted arch, the lowest voussoirs act as combinations of springer and impost blocks, and are called springers. Impost blocks are not used at all in such.

[396] Hammond 1967, 660, 669; Dakaris 1972, 155.

[397] Kanta-Kitsou & Lambrou 2008, 25–34.

[398] Richter 2016, 328-331.

4.2 THE SPREAD OF FORTIFICATIONS: AFTER ALEXANDER THE MOLOSSIAN'S ITALIAN CAMPAIGN, CA. 331-300 BC

One of the largest settlements in Molossia is the fortified site of **Kastritsa**, identified as ancient Eurymenai and/or Tekmon. Details of the fortifications were studied in two of the papers: in Paper IV, the focus was on the small postern at the southwestern sector of the circuit, while the great pentagonal battery in the southeastern corner was studied in Paper V.[399]

The site is located opposite Ioannina on the south side of Lake Pambotis on an oblong ridge, the long axis of which runs from south to north, with the short sides being precipitous while the approaches are less steep on the other sides. Surrounding the northern summit of the ridge is the city enceinte, with an area of 34.5 ha.[400] The highest peak of the ridge is located outside the walls to the south, a very gently northward–sloping saddle connects the two peaks.

The fortifications follow the edge of the cliffs in the east and north, descending to a slightly lower level on the west side. As these fortifications follow the lay of the land, enfilading consists of irregularly located jogs, and the few towers were only built in connection to the gates. In the south, facing the saddle along a 300 m front are the strongest fortifications. In the southwest, a straight wall reinforced with two rectangular towers 35 m apart ascends the ridge. At its eastern tip, in the junction with the following southbound curtain is a postern. The fortifications then run southward, constituting a huge U-shaped projection on the summit; its bottom is protected by a large rectangular tower in the southwest and a huge pentagonal battery in the southeast (Fig. 36).

[399] I have only visited the site twice, the first time in 2007 and later in 2015. I have not documented the walls personally, but am referring to the literature and my own observations conducted without measurements.

[400] Yiouni *et al.* 2015, 47.

Figure 36 Kastritsa, bottom of the U-shaped projection on the summit. On the left is the quadrangular tower and the immense pentagonal battery is on the right. View towards the north. Photo M. Suha 2015.

The curtains in the south are the thickest of the whole circuit, at 3.6–3.9 m while in the northeast, north, and west sectors, the average thickness is only 2.6 m.[401] The masonry is polygonal throughout, the blocks are medium sized, quarry faced with tight joints, and all the corners are drafted. Occasional compartment walls can be seen in the curtains. There are two large gates and a postern on the east side. A tangential gate of an unknown size is located in the northwestern tip of the enceinte.[402] Studied in Paper IV, the postern in the southwest is located at the junction of the southwest curtain and the western arm of the U-shaped projection. The postern opens towards the south and is enfiladed by the curtain to the east.[403] As the entrance is blocked and in poor shape it is difficult to say with certainty how it was covered. Based on the two blocks still in situ on the eastern side of the opening, I suggest that the postern was semi-corbelled with diagonal consoles (Fig. 37). The blockage of the postern is most likely not intentional, but the result of a collapse.

[401] Pliakou 2007, 108, 119.

[402] Yiouni *et al.* 2015, 31–39.

[403] Cf. the siting of northeast postern of Elea, see above and Fig. 35.

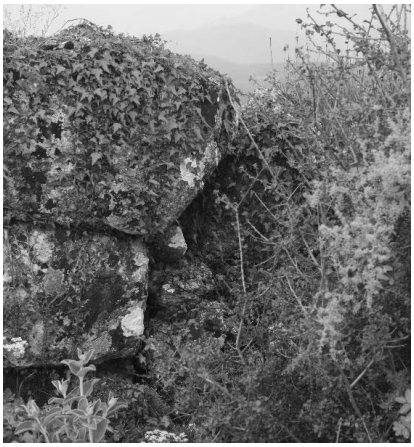

Figure 37 Kastritsa, the blocked-up postern in the southwest. A preserved diagonal console of the semi-corbel covering the postern. Seen from the inside out, toward the southwest. Photo M. Suha 2015.

Three of the four towers in the south are rectangular. The dimensions of the two small ones along the southwestern wall are unknown, but they are clearly smaller than the one in the western corner of the U-shaped projection. This tower is built slightly askew in relation to the curtain, with the bottom of the U running from west–southwest to east–northeast, while the front of the tower runs from east to west and the side walls from south to north. In its original form, the pentagonal battery was an identical rectangular tower. Originally, the dimensions of both towers were apparently ca. 9 m wide by 8.1 m in projection.[404] Adding the thickness of the curtain here, 3.6–3.9 m, the towers would have had total areas of some 9 x 11.7–12 m, 105.3–108 m^2. Thus, even in its original layout, the southern tip of the enceinte would have been very well defended.[405] At a later phase, the southeastern tower was enlarged by adding an extremely long, sharp triangular apex in front of the south wall. In the third phase, the whole structure was heightened. Either in the second

[404] While Hammond 1967, 174 describes the dimensions of towers, his measurements are in paces, yielding strange results. For the southwestern tower he gives 19 paces as the width, with a projection of 16 paces. If a pace is assumed as ca. 0.75 m, the width would be 14.25 and the projection 12 m; with the English measurement equating a pace to one yard, the dimensions would be 17.29 by 14.56 m. In later literature, the towers are not described individually. Yiouni *et al.* 2015, 43–45 concentrated on describing the pentagonal battery. I have deduced the dimensions of both southernmost towers from the brief mentions in the literature, combining them with the mention of the southern curtain wall thickness in Pliakou 2007, 119, who in turn does not describe the tower dimensions at all.

[405] When I was writing Paper V in 2016, I had no knowledge of Pliakou 2007, thus the sizes of the towers were calculated differently. With the dimensions deduced from Pliakou 2007, I should have classified both of the towers at the southern tip of Kastritsa as batteries.

or the third phase, a narrow outer wall, *proteichisma,* was added in front of the fortifications at a distance of some 3.5 m.[406]

Like so many others, the enceinte of Kastritsa has been dated varyingly over the years. Hammond identified the site with Eurymenai, not Tekmon, and argued for three construction phases. He dated the first broadly to the 4th century BC, the second to 280–230 BC, and the last to 230–167 BC. According to Pliakou, in the 1950s, S. I. Dakaris suggested a date between the end of the 5th and early 4th century BC, while a later study by Vlachopoulou also connected the walls to the reign of the Molossian King Tharypas in early 4th century BC. Pliakou herself had a different opinion, dating the enceinte to the Hellenistic period on the basis of the bulging polygonal masonry and the presence of *emplekton* (i.e., crosswalls within the curtains). She also presented finds from the site that included early 3rd century BC pottery as well as two coins of the 4th century BC, one of Philip II and one of Kassandros, and a few contemporary sherds. Based on the finds, she could not assign a 4th century date to the enceinte, but instead dated it to the 3rd century BC.[407] The newest guidebook by Yiouni *et al.* is very cautious in assigning any dates to the walls or building phases, only mentioning that late–3rd and early–2nd century BC ceramics had been found in the destruction layer at the base of the southern walls and the battery.[408]

Eurymenai was besieged and eventually plundered by the Macedonians in 313 BC. The site at Kastritsa has been identified as being either Eurymenai or Tekmon. Yiouni *et al.* (2015) reported a great number of catapult sharps and balls being found in the destruction layer in front of the southern walls, testifying to one or several sieges. As such they could be associated with either the siege of Eurymenai in 313 BC or the siege of Tekmon by the Romans in 167 BC. Additionally, while there are no historical references, the Aetolian attacks of 219 and 217 BC could also be responsible for the siege material found. As to the identification of the site, I am unable to comment either way. Perhaps the fortified settlement originally called Eurymenai was later renamed Tekmon.

Regarding the construction date of the defenses, unlike the previously discussed sites, for this enceinte I would be hesitant to assign such a *late* third century date as argued by Pliakou. The whole *Geländemauer*-type of enceinte is built of limestone obtained from the site. The shape of the blocks is connected to the properties of the stone as well as the local tradition of utilizing polygonal masonry, and as such could be of any date in the Classical–Hellenistic period. The south curtain is thick and protected by rectangular towers at close intervals. The two very large towers at the corners of the U-

[406] Yiouni *et al.* 2015, 41–45. The fourth phase is Byzantine, and thus not relevant to the current study.

[407] Hammond 1967, 173–174, 659, 668–670; Pliakou 2007, 120–123. I was unable to obtain the 1950s sources of Dakaris or Vlachopoulou's study of 2003, thus I only refer to information cited by Pliakou 2007.

[408] Yiouni *et al.* 2015, 45.

shaped wall projection were certainly built to house a formidable array of defensive catapults from the start. On the other hand, the other, less approachable walls are considerably flimsier, following the brow of the ridge with only sporadic jogs, both fairly primitive features in fortifications. Based on these features, I dated the original enceinte to the 4th century BC, most likely to its last third (i.e., 330s–320s BC). The second phase with the enlargement of the pentagonal battery, which according to Yiouni *et al.* took place fairly soon after the first phase, could perhaps be explained by the aftermath of the siege of 313 BC or the reign of Pyrrhos.[409] The third phase could date to the troubled times in the late 3rd century BC.

[409] I hypothesized in Paper V, 95, that the second phase could be Pyrrhic. With current, more profound knowledge of the historical events, the 313 BC siege by Lykiskos, followed by the second Macedonian contingent, could also be a distinct possibility. Unfortunately, I have no way of proving either date.

Gitana, the largest settlement in Thesprotia, as studied in Paper V, was apparently fortified at around the same time as the initial phase of Kastritsa.[410] Gitana is located along the Kalamas, near its confluence with the tributary Kalpakiotikos some 8 km north of Igoumenitsa. The site consists of the settlement, on a lower plateau protected by the bend of the river along the south and west, while its northeastern side is protected by the high ridge, the Vrysella. The walls circle the lower town on three sides, but the eastern edge lies on the flat valley floor with fortifications nowhere to be found (Fig. 38). As the most probable course of walls is located close to a meander of the river, its disappearance could be the result of floods over the past two millennia.

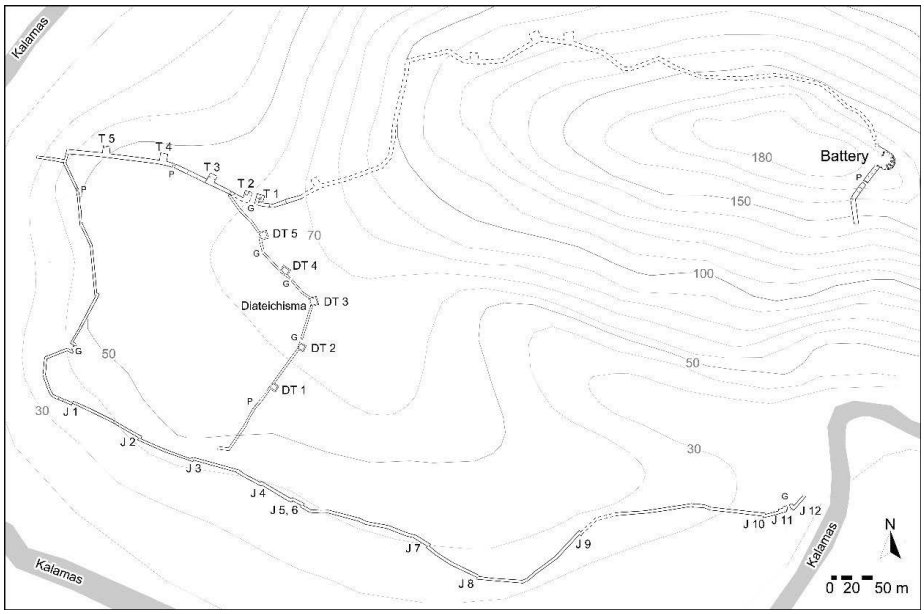

Figure 38 Gitana, plan of the fortifications. Jogs are indicated by J, towers by T, *diateichisma* towers by DT, gates by G and posterns by P. Map by M. Suha 2014, the obscured walls on the Vrysella, drawn in dashed lines, after the CAD data of the Ephorate of Antiquities of Thesprotia.

The strongest fortifications are located in the northwest, on a gently sloping area. Here, a straight curtain 4.0 m thick is enfiladed by five large rectangular towers T1–T5.[411] The easternmost tower T1 clearly has its fill divided into six compartments, and a similar layout can be expected of the other similar towers: four compartments in the projecting part and two in the curtain behind. A frontal north gate is located at the eastern end of the curtain, covered

[410] I documented the enceinte of Gitana in May 2015, assisted by Tommi Turmo, over three working days.

[411] Scanty remains of a sixth tower are visible on a steep slope of Vrysella ascending to the northeast, but the tower was not studied as it was unapproachable due to thick vegetation.

by the modern access road (Fig. 39). Aside from the towers T1 and T2 flanking the gate, the towers have reciprocal distances of 32–49 m. In addition, one of the frontal posterns opens across this curtain approximately half way across, east of T4. Starting from the northwestern corner and descending towards the river is a spur wall protecting a theater located outside the wall circuit.

Figure 39 Gitana, the northwestern sector, seen from the Vrysella. The north gate with its flanking towers T1 and T2 are covered by the dirt road on the left. View towards the southwest. Photo M. Suha 2015.

The other sides of the lower town are circled by much weaker walls, on average only 2.5 m thick and enfiladed merely by very irregularly spaced jogs. Aside from the jogs, there are several small offsets resulting from following the edges of the escarpment. They are, however, useless in defense, providing no space for defenders. In the west is the frontal main gate, protected only by a large, roughly V-shaped wall projection to its south.[412] The gate provided access to the theater and to the river front, the Kalamas having been navigable at least up to this point in antiquity.[413] A frontal postern opens across the west curtain just above the theater. At the eastern end of the south curtain is a crude southward-opening forecourt gate of very modest proportions. To the east of that, the walls disappear. The south slope of Vrysella is very steep, requiring no walls. The area near the summit, with a less steep gradient is also fortified, this time with a polygonal wall 4.6–4.8 m thick, its faces bound by frequent compartment walls. Halfway across the wall is a frontal postern.

At the northern end of the curtain, located just below the summit, is the formidable horseshoe-shaped battery, the most impressive structure of the entire circuit. At 14 m wide, measuring 12.5 m from front to back, the battery

[412] The layout of the gate is identical to the west gate of Polyneri, cf. Dakaris 1972, fig. 46.

[413] Today the hydroelectric dam of Kalamas (located to the northwest of the site) prevents navigation along the river.

has a total area of 150.5 m². The axis of the battery was aimed southeastward to control the relatively narrow saddle leading in from the adjacent, higher summit of the ridge. The foundation is built of large trapezoidal blocks, wedge-shaped in plan, acting as voussoirs of an arch set in the horizontal plain. As indicated by the remains, the foundations were originally three masonry courses, or some 1.5 m higher. There are a few faint vertical grooves cut into the masonry, the facing treatment of which could be classified as slightly bulging, although not as rough as a quarry face. The socle is filled with packed earth and the fill is divided into wedge-shaped compartments by ashlar walls radiating from the center. Four walls are visible on the surface, and another two or three are obscured by vegetation. The facing blocks are connected to each other by two dovetail clamps on either side (Fig. 20), while the compartment walls are bound to the facing blocks by a single clamp. While the clamps were made of hardwood and thus disappeared ages ago, their cuttings are clear.[414]

In the southwestern corner is a short section of chamber walls still in situ, which are built of quarry faced polygonal masonry some 1.1 m thick with two faces and no infill. With such walls, the maximum floor area of the battery would have been ca. 100 m². Such a large chamber with heavy-set underpinnings and all of the blocks of the foundation tied together with resilient hardwood clamps, points to an artillery emplacement designed to house a very large caliber stone-thrower. Such a machine would have needed a relatively high chamber, above which there might have been another chamber with several smaller caliber stone- or sharp-shooters.

From the battery onward, the fortifications on Vrysella disappear into the vegetation. The wall trace in the maps of the Ephorate has been drawn to follow the brow of Vrysella and then turn southwestwards to connect with the northwestern walls. The last feature is a *diateichisma,* a wall built across the lower town to separate the higher-lying western part of the settlement from the rest. Five quadrangular, hollow-based towers strengthen the fortifications pierced by three frontal gates. All of the towers have doors leading to the ground floor chamber in their back walls.

The masonry in the lower town walls and towers is predominantly medium sized quarry faced polygonal, all corners are drafted and occasional vertical grooves are also present. The faces of the curtains are bound by regular compartment walls. All stone walls have conspicuously flat tops, indicating that the superstructure was built of sun-dried mudbrick (Fig. 40).

[414] Cf. the cutting in Kastri Rizovouni, in the northeastern corner of tower T 2, adjacent to the north gate

Figure 40 Gitana, a tower in the middle of the northwestern sector. Note the flat tops of both the tower and the curtain, despite the use of polygonal masonry. View toward the east. Photo M. Suha 2015.

The battery and the adjacent curtain to its south are different as they are built entirely of stone. The curtain is built of quarry faced polygonal blocks and the short preserved stretch of the battery chamber walls is similar in appearance. Up on the ridge, the stone for the blocks would naturally have been available right on the spot.

Hammond argued for two phases for the fortifications between 290–272 and 280–230 BC. Dakaris argued for an earlier *synoikism* "during the latter half of the 4th but before the 3rd century BC", based on the finds that included roof tiles of the 4th–3rd centuries BC, Hellenistic pottery, and a probable Molossian coin of 360–330 BC. Kanta-Kitsou proposed a date slightly after the mid-4th century BC. According to her, the city was founded to house the seat of the League of Thesprotians who had just annexed the area around the city formerly possessed by the Chaonians. The League also issued a short-lived coinage in 335–330/325 BC.[415]

I dated the fortifications slightly differently, arguing that the lower town walls and the battery were built at different times. On one hand, the lower town walls both had strong advanced features such as large towers and the associated thick wall in the northwest, as well as crosswalls within the towers and curtains. On the other hand, there were also primitive features such as the weak fortifications in the west and south, and the presence of only a few openings in the walls. It was also noted that all of the walls clearly had a mudbrick superstructure. Based on the above–mentioned features, I dated the lower town walls to the 4th century BC, most likely to its last third.

In contrast with the lower town walls, the battery on Vrysella is more advanced, built entirely of stone. Hammond dated the battery as belonging to

[415] Hammond 1967, 659; Dakaris 1972, 108–110; Kanta-Kitsou 2008, 20–23. Cf. the argument of Riginos and Lazari 2007, 25–28, that the earlier seat of the League would have been sited at Elea in 340–335 BC.

the first stage of fortification, sometime between the 290s and 270s BC, while Dakaris argued for a date in the 4th century BC, with the battery and the town fortifications being contemporaneous.[416] The foundation of the battery is extremely sturdy, indicating that it was built during a time when poliorcetics and catapult artillery had sufficiently advanced. The massive foundations, divided into small compartments with all stones bound by wooden clamps, indicate that the battery was designed to house a heavy stone-thrower in the first floor. Using Rihll's estimates of weapon sizes, a freely-pivoting 20–mina catapult, discharging stones weighing ca. 8.8 kg, would fit into the chamber. Allowing for more restricted firing arcs of 100°–140°, a 30– or even a 60–mina machine with a shot weight of ca. 13.1 and ca. 26.2 kg could have been shoe-horned within. The lower chamber housing the large stone-thrower was probably high, perhaps 4 m. Above that, there could have been a chamber housing several arrow-shooters, at maximum five 5-mina, ca. 2.2 kg stone shooters, or 4-cubit arrow-shooters with the bolt length of ca. 1.85 m.[417] The upper floor walls need not have been high; two meters would most likely have sufficed and above that, a pitched roof with a curved front adding another 2 m to the height would have brought the total height of the battery to some 14 m[418] (Fig. 41).

A few comparable structures can be found in different parts of the Greek world. In Selinous, Sicily, the North Fortress, the formidable northern outwork complex of the city circuit consists of two large semi-circular batteries joined by a structure known as a "Long House",[419] in between the two. In the northeastern extremity of the outworks, aimed northwards, is the North Bastion, a very large, hollow-based semi-circular battery. Behind that is the north gate, gate XII, followed by the Long House, originally a three-storied stretch of a hollow-based curtain 74 m long, its ground storey walls pierced by twelve posterns opening northward. Guarding its western tip is the slightly smaller, westward-aimed West Bastion. Whereas the North Bastion differs considerably from the Gitana battery, the West Bastion with its solid, compartmented socle design and size is almost an exact match.[420] According

[416] Hammond 1967, 659; Dakaris 1972, 108.

[417] Rihll 2007, 291–292.

[418] For an in-depth analysis of the battery, see M. Suha 2019, "The Semicircular Tower of Gitana. Architecture and the Defensive Importance", in I. P. Chouliaras & G. Th. Pliakou (eds.), *Thesprotia I. 1st International Conference On The Archaeology And History Of Thesprotia (Igoumenitsa, 8–11 December 2016). Proceedings 1*. Ioannina 2019, 269–280.

[419] Das Lange Haus, as named by its original excavator, Fritz Krishen in 1941, according to Mathieu 2003, 128–129.

[420] The hollow-based North Bastion has an external radius of 9.88 m and internal radius of 7.32 m, making it considerably larger than the Gitana battery. The West Bastion has a radius of 6.91-6.95 m, yielding a total width of 13.82-13.90 m. It also has a solidly filled socle divided into compartmets by two crosswalls of a single block thickness. By drawing on the analogy of the neigbouring Lange Haus

to Karlsson, the Selinuntine outworks have been archaeologically dated to the beginning of the 3rd century BC. He argued that the complex was built during Pyrrhos' stay in Sicily in 278–276 BC, and that the batteries were inspired by the Gitana battery. Lawrence, on the other hand dated the batteries broadly to the 340s–310s, most likely 311–310 BC.[421] Since then, the Selinuntine Hellenistic defenses were studied by Klaus Mathieu in his 1999 dissertation and its subsequent abridgment published in *Selinus I, die Stadt und ihre Mauern* of Dieter Mertens in 2003, wherein both Mertens and Mathieu dated the outworks to the reign of Agathokles, in 307/306 BC.[422]

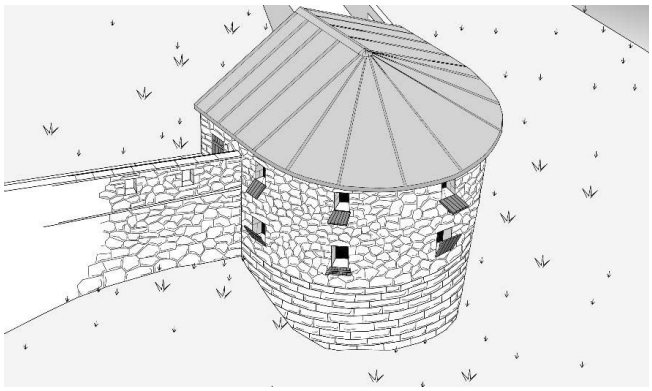

Figure 41 Gitana, the battery on Vrysella. Reconstruction drawing of the battery with a total height of 14 m. Seen from the southeast. Drawing by M. Suha 2015.

The Great Battery of Gorítsa in Magnesia is a large structure with a roughly elongated B-shape. On both ends of the battery are large, deep chambers with projecting semicircular fronts connected by a shallower rectangular platform in between. The foundations of all of the fortifications on site were built of stone with a superstructure of mudbrick. The enceinte was short-lived, built during the last third of the 4th century and apparently abandoned around 300 BC.[423]

While peculiar and a rare feature in Epirote fortifications, the presence of dovetail clamps does not help with accurate dating. In Acarnania, Ley demonstrated the presence of such clamps on sites ranging from the mid-5th

(Long House), Klaus Mathieu reconstructed the bastion with two super-imposed chambers and a semicircular, half-conical roof. Mathieu 2003, 139–144, figs. 318 and 319.

[421] Karlsson 1992, 59–62; Lawrence 1979, 292–295.

[422] Mertens 2003, 125; Mathieu 2003, 126. These were not cited in Paper V, as at the time of its writing, I had no knowledge of the up-to-date literature concerning the Selinuntine defenses.

[423] Bakhuizen 1992, 112–113, 150–155, 163, fig. 58A.

down to the end of the 3rd century BC.[424] Based on the structural features and comparable batteries in the Greek world, I dated the battery slightly later than the lower town walls, to around 300 BC.

Pyrgos Ragiou is a sturdily built small fort, located 6.5 km northwest of Igoumenitsa, on a conical hill in the Kalamas delta. It was also studied in Paper V.[425] The enceinte is an elongated hexagon in shape, with the long axis running from southeast to northwest (Fig. 42). Three corners along the northeastern side have large towers (T2- T4), which are built at the junctions of two curtains of different headings; the towers are located obliquely to both. A small tower (T1) is located in the western tip, providing no enfilading to the southwestern curtain where the builders utilized the bedrock, incorporating two outcrops into the curtain. The elaborate tangential main gate has three successive chokepoints, possible gate locations. Still, it is only weakly defended by two jogs (J1 and J2), flanking the approaches. In the north curtain is a postern located slightly to the east of T2.

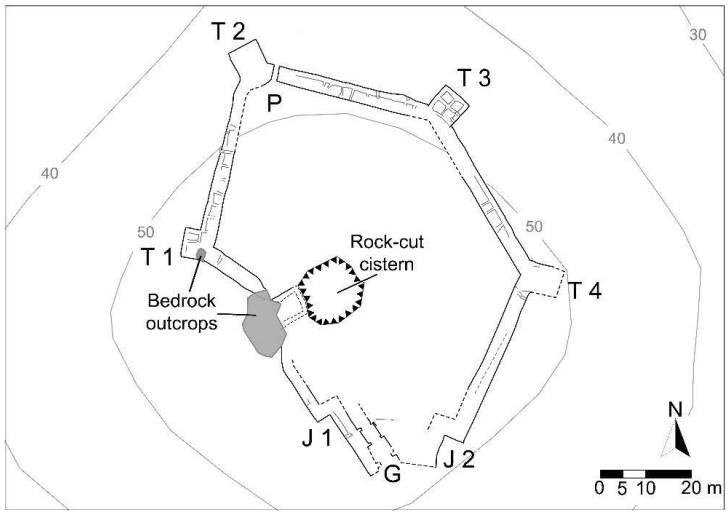

Figure 42 Pyrgos Ragiou, plan of the fortifications. Jogs are indicated by J, towers by T, gate by G and the postern by P. Map by M. Suha 2015.

The three large towers T2–T4 are roughly identical in size and design, with T3 being entirely visible and preserved to such an extent that its structure can be analyzed. The tower has a solid base and the fill within is divided into six compartments by three crosswalls.

[424] Ley 2009a, 61, 64, 69–70, 74–78, 135–136, 145–149, 159, 163–164, 167. Ley 2009b, 37, 51, 53–54, 79, 91, 93, 95, 315–316, 356–357, 371.

[425] I documented the site together with Tommi Turmo in May 2015 during one working day.

The masonry is mostly large trapezoidal with quarry facing (Fig. 43), but occasional stretches of medium quarry faced polygonal can also be found. The only exception to this is the gateway, which is built of tooled-faced ashlars. All of the curtains have regular compartment walls. In the northern curtain, there are several drains, all the corners are drafted, and there are some vertical grooves in the masonry. The tops of the walls are level throughout, indicating that the superstructure was of sun-dried mud brick.

Figure 43 Pyrgos Ragiou, southwestern curtain. Typical quarry faced trapezoidal masonry used in the fortifications. Photo M. Suha 2015.

The most notable feature of the fortifications is the peculiar *double outer facing*, approximately 1–1.3 m thick, observable in both the towers and all of the curtain walls. While T2 is obscured by the Ottoman tower house, *koulia,* it very likely had a similar double facing. The double facings are held together by frequent headers. In T3 the headers are especially large, connecting both outer faces to the internal crosswalls (Fig. 44).

Figure 44 Pyrgos Ragiou, tower T3, south wall. Headers in the foreground and beneath the scale bar. The double outer facing is visible between the headers and in the northeastern curtain on the background. View toward the southwest. Photo M. Suha 2015.

Before Pyrgos Ragiou, I had seen an additional outer facing in the north curtain of Ammotopos, located 13.5 km north–northwest of Arta, but there the outermost skin of the wall is a later addition to a pre-existing curtain.[426] The original enceinte that was built during the first half of the 4th century BC had curtains 2.0–2.2 m thick, and only utilized jogs as enfilading. During the late 4th or early 3rd century BC, the enceinte was strengthened by adding eight rectangular towers with internal crosswalls in suitable places and a *new outer facing* in the curtains. After the addition of the new outer facing the curtain thickness reached 2.6–3.7 m.[427]

Karlsson described some Sicilian towers with internal crosswalls and a double outer facing: the tower at Porta Siracusana in Leontinoi was built of ashlar blocks of spolia, with alternating courses of headers and stretchers. In the courses comprising stretchers, the blocks were laid strictly in pairs. He dated the tower to the reign of Agathokles, 316–289 BC. Tower B of Corinth, dated to the late 4th century BC, was built in an identical way, with ashlars in alternating courses of headers and stretchers, the latter always "laid side by side in pairs". An almost similar structure can be seen in Torre A of Heloros, again built of ashlar blocks laid side by side, but here, the walls only consist of courses of stretchers. The tower was dated to "not before the 310s BC".[428]

The Italians uncovered stretches of thick curtain with a double outer facing in their 2005 excavation of the enceinte B of Phoinike. The curtain was regarded as belonging to the one and only building phase of enceinte B, preliminarily dated to the first half of the 3rd century and slightly later to ca. 290–240 BC.[429]

The so called "Kononian Walls" at Piraeus, following the shores of the Akte Peninsula between the Kantharos and Zea harbors, apparently have a parallel to a double outer facing in at least one tower. The best preserved, practically continuous stretch of the walls, measuring some 1700 m, is located in the southwestern corner of the Akte Peninsula, between Al. Zaimi Street in the north and Sapphous Street in the south. The curtains, 3.1–3.4 m thick, are built of quarry faced limestone ashlars procured on the spot, and laid almost exclusively as stretchers. The wall trace is reinforced at approximately 50–60 m intervals with 4–6 m wide quadrangular towers.[430] The tops of the towers are obscured by modern development and trash, but the southernmost tower in this stretch of fortifications, located adjacent to a basketball court some 30 m southwest of Sapphous street, clearly has a double outer facing that is visible both in a photo I took in 2013 (Fig. 45) as well as in a satellite image (Fig 46). Due to the poor state of preservation, I am unable to confirm whether this

[426] Ammotopos is number 22 in Appendix II.

[427] Angeli 2005, 17, 19–25.

[428] Karlsson 1992, 50–54, 63, 103–107, figs. 40, 42, 53.

[429] Bogdani and Giorgi 2007, 22–24, 28, figs. 1.12–1.15; DeMaria *et al.* 2011, 351, figs 3–4. In Appendix II, Phoinike is number 117.

[430] von Eickstedt 1991, 18–19. He calls the quadrangular projections as bastions, not towers.

tower had a solid filling or if there was a chamber at the ground level. A solid foundation up to the internal ground level, a couple of meters above the external ground level, would seem more likely.

Figure 45 Piraeus, the Kononian Walls, a tower near Sapphous Street in the southern corner of the Akte Peninsula. The double outer facing of the tower is visible in the side and front walls. View toward the northeast. Photo M. Suha 2013.

Figure 46 The same tower seen in a satellite image. The inner skin blocks cast a nicely visible shadow on the left side of the tower. Image © 2019 Maxar Technologies.

In his 1991 description of the Piraeus fortifications, Klaus-Valtin von Eickstedt dated the walls through building inscriptions. The 5th century Themistoklean circuit saw several rebuilds during the 4th century, first by Konon in 395/394–392/391 BC followed by renovation phases in 337/336 and 307/306 BC. The ashlar walls between Kantharos and Zea harbors, which also

include the tower in question, were attributed to the Kononian phase (i.e., 390s BC).[431]

In addition, the northeastern corner tower of the city wall of Salamis, Attica, had an identical structure. In the spring of 2016 I participated in the documentation of the site and was able to clean the surroundings of the tower, exposing the very badly deteriorated double outer facing of the stone socle. This tower has even retained a small portion of its mudbrick superstructure. This is the closest parallel to the structure of Pyrgos Ragiou, but unfortunately I found no references on the Salaminian fortifications or their dating.

In the 1988 excavation of Pyrgos Ragiou, the excavator Preka-Alexandri identified a *proteichisma,* an outer defensive wall,oin the northeastern side between towers T2 and T3. The wall runs outside the curtain on a parallel course at a distance of some 6 m.[432] I, however, am not convinced that this is the case here. The wall is visible even in the Google Earth image and clearly runs northwestward from tower T3, but seems to begin from the corner of the tower. Now, why would it begin from a tower and not also maintain a distance from the tower, if it was supposed to protect the northern fortifications? A proteichisma located ca. 6 m from the main curtain but at the same level as the outer corners of the large towers T2 and T3, would deprive the towers of their ability to enfilade the curtain. Instead of a proteichisma, I would think that this wall is more of a retaining wall, and not built for actual defense. In all, the strongest fortifications are located on the northern side of the fort, and the southern part is conspicuously weaker. Large rectangular towers could have housed a formidable array of defensive artillery, and as they were built obliquely to the curtains, the fields of fire provided by the design would be wide.

Earlier research has dated the site variously from the 5th century BC to the Hellenistic period. Dakaris argued that the fort was built before 427 BC as a Corfiot stronghold protecting their landward holdings in the "Corfiot Peraia", as has been argued for the nearby sites of Lygia and Mastilitsa.[433] Pyrgos Ragiou is a rare site in having had its whole perimeter thoroughly excavated over several years. Unfortunately, the archaeological material is inconclusive, as it ranges from Prehistoric to Ottoman era finds, although the majority do seem to concentrate in the Classical and Hellenistic periods.[434]

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[431] von Eickstedt 1991, 25–29.

[432] Preka-Alexandri 1993, 356, plate 202. During my visit on site in May 2015, the blocks were completely obscured by vegetation.

[433] Dakaris 1972, 34–35, 104–106; Kanta-Kitsou 2008, 15. In Appendix II, Lygia A–C is number 66 and Mastilitsa/Masklinitsa 67. Note, however that Lygia has recently been thoroughly re-examined and dated differently by Spanodimos 2019, 251–264.

[434] A Lefkadan coin of 330–250 BC was the only dated find of 1978, according to Preka-Alexandri 1985, 223. Excavation in 1988 yielded pottery and lamp fragments of the Classical and Hellenistic periods, coins of the Classical, Hellenistic and Roman periods, figurine fragments datable to the Archaic and Hellenistic periods, as well as Prehistoric pottery and lithics, according to Preka-

Winter and Maher argued that walls with a second outer facing should be dated to the mid–4th century or thereafter. However, they refer to cases where an older wall was strengthened by adding a new outer facing.[435] In Acarnania, the enceinte of Alyzia has a stretch of double outer facing in the north sector. The original curtain was strengthened by adding a new outer facing in the third phase, dated by Ley to the second quarter of the 4th century BC.[436] As mentioned, the mid–4th century enceinte of Ammotopos received an additional outer facing during the late 4th or early 3rd century.

The Italian excavations of 2005 at the northeastern curtain of enceinte B of Phoinike saw three trenches –B 13, B 14 and B 17 –cut across the curtain and one, B 16, within a nearby tower. The curtain trenches revealed the presence of a double outer facing, belonging to the first and only phase of building. In trench B 13, the lowest part of the curtain fill contained the disturbed remains of an earlier inhumation tomb. The finds from within the fill were preliminarily dated to the first half of the 3rd century BC. [437] Tower B16 had a matching design to the towers in Pyrgos Ragiou, having similar compartmenting and being located aslant to the adjacent curtains on either side. However, the Phoinike tower lacked the double outer facing. Like the curtain, the tower was preliminarily dated to the beginning of the 3rd century BC, but the dating of both have since been slightly adjusted, to the 290s–240s BC.[438]

I dated the walls by basing my arguments on the features in the design and the execution of the curtains and towers, the most important being the double outer facing of both. Large towers capable of housing a variety of artillery pieces also point to a rather late date. The tower foundations have internal crosswalls that divide the fill into four compartments in the projecting part, with matching parallels in the nearby sites of Gitana, Doliani, Kastri Rizovouni and Megalo Gardiki. Of these, all except maybe the last,[439] are datable to the latter half of the 4th century BC. Based on the features above as well as the finds, I dated Pyrgos Ragiou to the 4th century BC, most likely to its last quarter. At that time, the fort would have stood on a conical island surrounded by a flat salt marsh or floodplains, and guarded the southwestern approaches to Gitana, or even its sea port.

Alexandri 1993, 353–356. The excavation of 1999 yielded pottery from the 4th century to the mid-2nd century BC, undated iron and bronze arrowheads, undated figurines, and Hellenistic bronze coins. Some Medieval coins and Palaeolithic finds were also recovered, according to Riginos 2005, 502. In 2000, two Corfiot coins of 300–229 BC were found underneath the floor of the *koulia*, according to Riginos 2009, 657.

435 Winter 1971, 134–135; Maher 2013, 81.

436 Ley 2009a, 52, 54.

437 Bogdani and Giorgi 2007, 22–24, 28, figs. 1.12–1.15. In Appendix II, Phoinike is number 117.

438 Bogdani & Giorgi 2007, 26–29; DeMaria *et al.* 2011, 351, figs 3-4.

439 For Megalo Gardiki and the question of its dating, see below.

Megalo Gardiki, identified as the ancient Molossian town of Passaron[440], is located some 9 km northwest of Ioannina on a distinct conical hill. The enceinte was studied in Paper V.[441] The fortifications circle the summit surrounding an area of 8.95 ha.[442] The walls are well preserved, except in the north where they have disappeared (Fig. 47).[443] The main gate of the enceinte was most likely located in the north, as it is the most easily approachable side.[444]

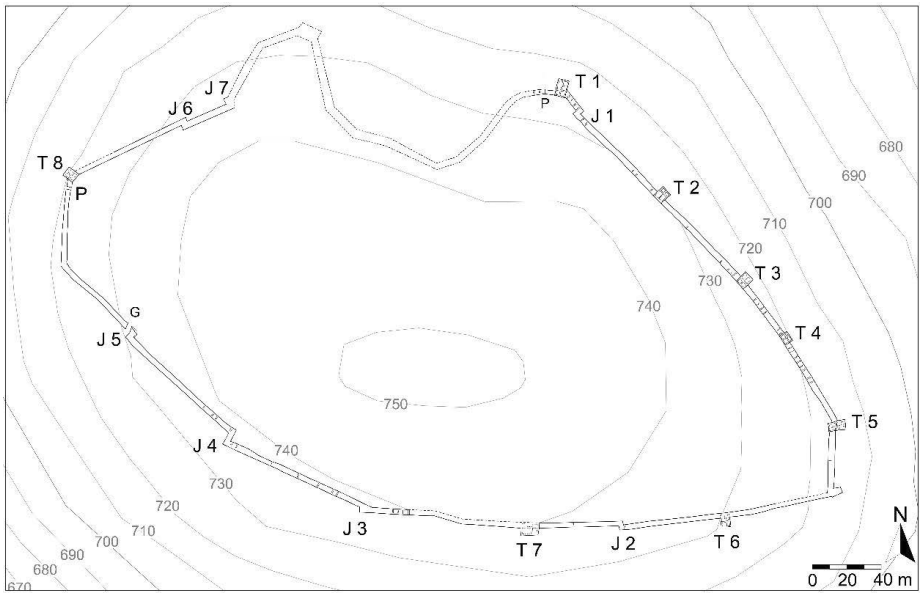

Figure 47 Megalo Gardiki, plan of the fortifications. Jogs are indicated by J, towers by T, gate by G and posterns by P. Map by M. Suha 2013 except for the northern tip between J7 and T1, drawn in dashed line, after Pliakou 1993, 263.

All curtains are compartmented by crosswalls at regular intervals. The strongest fortifications faced northeast. In the northeastern corner is a large

[440] The identification has been challenged by Dr. Georgia Pliakou, who places the town of Passaron within the Kastro of Ioannina. Whether its identification with Passaron stands or falls, a 4th or 3rd century BC ashlar wall has indeed been identified under the Tower of Thomas in the southern sector. Nevertheless, for the present study, I still consider Megalo Gardiki as Passaron.

[441] I documented the site together with my wife Johanna Yläranta-Suha in early December 2013. Three working days were needed for the total station survey, visual inspection, and photography of the site.

[442] Pliakou *et al.* 2015, 23, 37.

[443] In the map in Pliakou 1993, 263, the sector consists of a winding curtain and a wide tower or battery facing northeast to cover the approach along the less steep hillside. However, nothing could be seen in the woods during my visit in December 2013.

[444] Pliakou 2007, 60; Pliakou *et al.* 2015, 39.

rectangular tower (T1) built of polygonal masonry of fairly small blocks. The tower is located at the junction of two curtains of different headings with its long axis askew to both, closer to 45°, as opposed to the "normal" 90° or so.[445] The foundation of the tower is divided into six compartments: four in the projecting part and two in the curtain behind. Immediately to the west of the tower is a badly preserved postern (Fig. 48).

Figure 48 Megalo Gardiki, northeastern corner. In the foreground, a compartmented curtain with a slight offset, followed by the badly preserved northeastern postern. In the background, the western wall of tower T 1. View toward the east. Photo M. Suha 2013.

After this, the curtain is enfiladed by a single jog and three small towers T2–T4, all built at right angles to the curtain and with their fill divided into four irregular compartments. In the southern end of the curtain is another badly preserved large tower (T5), reminiscent of T1. The curtain then turns southward, until it reaches the southwestern corner of the enceinte. The scanty remains suggest that there was some kind of tower in the corner projecting westward, but nothing more can be said about it.

The south curtain, built on a steeply sloping hillside, is projected by four rather large jogs J2–J5 and two towers (T6 and T7) located at the eastern end. The jogs are clearly built with enfilading in mind, with their flank lengths varying between 2.5 to 7.7 m and face lengths of 57.8–91.0 m.[446] The eastern tower T6 is comparable to the smaller towers of the eastern curtain, but T7 is different in being wide, ca. 10.4 m, but with only a moderate projection of 4.2–4.7 m. Due to its width and relative shallowness, the six compartments within are arranged differently with three compartments both in the projecting part

[445] Cf. the towers of Pyrgos Ragiou and tower B16 at Phoinike.

[446] Cf. the long, irregularly spaced jogs in the southern curtain of Çuka e Aitoit, number 89 in Appendix II.

and the curtain behind. The poorly preserved south gate is located in the westernmost quarter of the curtain and consists of an inward–tapering corridor running askew across the curtain, and enfiladed by jog J5 to its east. The curtain then turns northward until it reaches a postern enfiladed by tower T8, the fill of which was also compartmented into four irregular compartments with the external ones being larger. The wall then runs northeastward, the last visible stretch having two jogs J6 and J7 facing each other, after which the remains disappear into the undergrowth. On the summit of the hill, there are concrete artillery positions built in 1912–13. Doubtlessly, their construction and the hauling of their constituent materials up the most accessible slope affected the preservation of the ancient walls on the northern sector.

The masonry of the fortifications is predominantly polygonal, but the blocks have differing appearances in different sectors. Large quarry faced polygonal blocks with tight joints dominate in the inner face of the east curtain, intermingled with several large lozenge-shaped blocks lacking in other sectors. On the external face, the polygonal blocks had a quarry face treatment, but the joints are not as careful on the inner face. Many blocks have deficiencies in the upper corner joints, plugged by small triangular and quadrangular stones conspicuously frequent only in this sector (Fig. 49). Occasional vertical grooves are present, but the tower corners have crumbled, thus preventing me from ascertaining whether the corners had drafting.

Figure 49 Megalo Gardiki, external facing of the east curtain. Note the frequency of small plug stones. Seen from the north. Photo M. Suha 2013.

The south curtain had different masonry in different sectors. In the east, the blocks were large polygonal, some up to 2 m long, and the masonry is quarry faced. Some smaller blocks have fallen from the facing, leaving holes in the bottom part of the masonry, however, the wall still stands to 2–3 m high. As the curtain continues westward, the upper part of the masonry changes. While the majority is still polygonal, many smaller blocks were nearly square or an elongated quadrangular shape (Fig. 50). Still further westward, the

masonry again changes into massive quarry faced polygonal with tight, careful seams (Fig. 51). No vertical grooves are present in the south curtain.

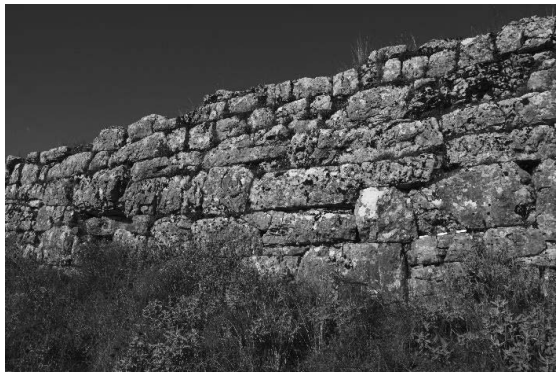

Figure 50 Megalo Gardiki, masonry in the middle of the south curtain. View toward the north. Photo M. Suha 2013.

Figure 51 Megalo Gardiki, south curtain. Different masonry slightly to the west of previous. View toward the northeast. Photo M. Suha 2013.

The northeastern slope is the most easily approachable; the others are steeper, but there are no completely unscalable cliffs or inaccessible precipices on any sides of the hill. Still, for the most part the fortifications, despite having thick curtains built of large masonry, are relatively weakly defended. Excluding the eastern sector, the preserved fortifications only had three relatively small towers and four irregularly located jogs with very long faces. Only one gate opens toward the south, in addition to which there is one postern in the southwest and one in the northeast.

Earlier research dated the enceinte varyingly, the arguments fluctuating between the 5th and the 3rd centuries BC. Hammond again argued for three late building phases, the first between 290–272, the second between 280 and 230,

and the third 230–167 BC. According to Pliakou, in 1956 Dakaris[447] argued for the existence of an older, smaller enceinte within the walls. His inner enceinte would have been built of polygonal masonry with no towers, for which he found parallels in Kastritsa, and thus dated both to the last quarter of the 5th or the beginning of the 4th century BC. In a later study in 1987, he reassessed the dating of the fortifications to the "latter half, yet before the last third of the 4th century BC" (i.e., 340s–330s BC).[448] The newest publication, a site guide by Pliakou *et al.,* dated the oldest fortifications on site to the Pyrrhic period.[449]

I came to a different conclusion in Paper V, written in 2016. While a Pyrrhic date was certainly credible, I saw no reason why the enceinte could not have been built slightly earlier. With only a very few openings, the design behind the fortifications is passive; the defenders were not meant to sally out but to sit behind the walls during a siege. Another trait suggesting an earlier date is the fact that the strongest fortifications along one side have frequent towers while the others have very limited enfilading, bearing a close resemblance to the walls of Gitana. All of the towers have solid foundations with a compartmented fill, and are not hollow-based as in many 3rd century sites.[450] The large six-compartmented towers at the corners, askew in relation to the directions of the adjacent curtains, have identical comparisons in Pyrgos Ragiou, Raveni and Phoinike.[451] Based on the features described, I dated the walls to the last decades of the 4th century BC.[452]

However, I must now admit that my analysis of the dating could have been erroneous. At the time of writing, I was not aware of Georgia Pliakou's dissertation of 2007 wherein she thoroughly analyzed the fortifications, presented the earlier research, and also gave a detailed account of the excavation of the fortifications she had conducted, as well as the finds yielded from the trenches. She sunk one trench adjacent to the eastern fortifications, apparently somewhere between towers T2 and T3.[453] The trench revealed the inner face of the polygonal curtain wall down to the bedrock on which it was founded. The soil layer at the level of the wall foundations yielded a few black painted *kantharos* sherds with West Slope decoration, datable to the first half

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[447] As already mentioned in connection with Kastritsa, I could not obtain access to Dakaris 1956a or Dakaris 1987, as mentioned in Pliakou 2007, thus I am referring to her work.

[448] Pliakou 2007, 63–65.

[449] Hammond 1967, 659; Pliakou *et al.* 2015, 41.

[450] Of course not all 3rd century BC towers were hollow-based, far from it. Still, cf. Dodona, number 56, Malathrea/Malahuna, number 90 and Agios Donatos, number 38 in Appendix II, to name a few 3rd century Epirote sites with hollow ground floors.

[451] Concerning the dating of Pyrgos Ragiou, see above and its Appendix II entry, number 65; Raveni is number 72; Phoinike is number 117. The tower in Phoinike is B16, described in detail in Bogdani & Giorgi 2007, 20–28, figs. 1.12, 1.17–1.18.

[452] Paper V, 89.

[453] The location of the trench is not stated, but by comparing Pliakou's pl. 3, figs. 4–6 to my own photos taken in 2013, I placed the trench slightly to the northwest of T3.

of the 3rd century BC. Some Early Iron Age ceramics were also found, however the majority of finds were datable to between the end of the Geometric and early Hellenistic periods. In defense of my argument, it might still be possible that Pliakou's finds are not connected to the building of the fortifications. As the 3rd century BC sherds were found in the *soil layer at the level of the foundations*, it is not impossible that at some stage later sherds originating from within the settlement drifted downhill and were trampled into the ground adjacent to the *already existing* curtain wall, which would have stopped their drift further downslope.

Her second trench was opened in the badly preserved fortifications on the western side, yielding much later material not connected with the building of the original fortifications. The masonry at the location is very different from the other sectors, consisting of smaller facing blocks. The trench, apparently located in the vicinity of jogs J6 and J7,[454] was cut across the whole curtain with the aim of finding material from within the central fill –but the fill yielded no datable material. She then stated that the foundation level on which the *newer inner facing*[455] of the curtain was built yielded only a few undiagnostic sherds. The layer just above this one yielded 2nd century BC ceramics and a bronze coin of the Koinon of the Epirotes with a post-148 BC date. [456] This is an interesting result, as it indicates that life continued in the settlement even after the Roman siege of 168 BC and the sack of Epirus in 167 BC, and that in some cases, even under Roman rule new fortification walls could have been erected or damaged walls repaired. Thus, to conclude the description of Megalo Gardiki, the fortifications have two phases, the first being the original enceinte surrounding the large settlement. The original walls were built during the period stretching from the last quarter of the 4th to the first quarter of the 3rd century BC, the latter being a more secure date supported by the finds. The second period of fortification followed after the Roman destruction of 167 BC, showing that some sites had their walls repaired even under Roman rule.

4.3 THE PEAK OF FORTIFICATION: PYRRHOS AND HIS SUCCESSORS, CA. 300-220 BC

By Pyrrhos' time, the southern Illyrians had also become Hellenized. Building fortifications became ever more common in Epirus, which now experienced a boom in fortification. Pyrrhos himself had a reputation for even fortifying his marching camps, which was unusual at the time.[457] **Dodona,** the most important oracle site in Epirus, located approximately 14 km south–southwest

[454] The location is not described, but by comparing Pliakou's plate 4, figs. 7–8 and my own photos, I placed the second trench in the vicinity of the opposing jogs J6 and J7.

[455] "νεότερης εσωτερικής παρειάς"

[456] Pliakou 2007, 66–67.

[457] Hammond 1967, 572.

of Ioannina on the eastern slopes of Mount Tomaros, also received a thorough overhaul of its buildings during this time.[458] An acropolis fort was built on the low hill rising behind the Sacred Oak, and the massive theater was enlarged using heavy-duty walls reminiscent of the fortifications. The fortress was studied in Papers IV and V,[459] where Paper IV examined the gates and the postern of the enceinte, while Paper V gave an overview of the towers, their possible armaments, and the jogs of the enceinte (Fig. 52).

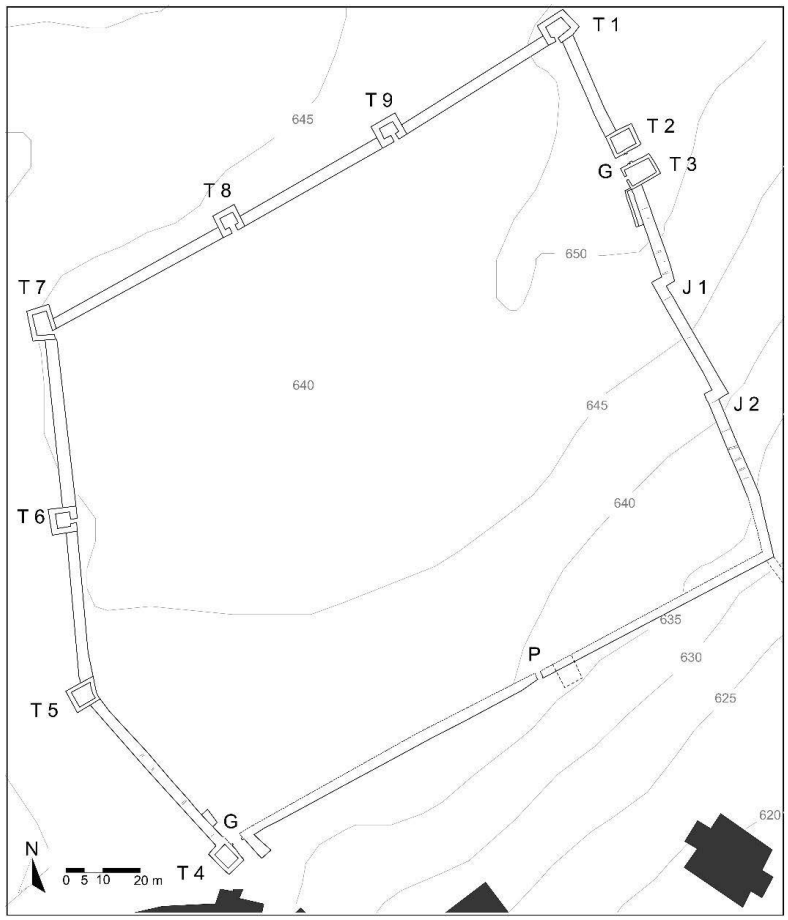

Figure 52 Dodona, plan of the fortifications. Jogs are indicated by J, towers by T, gates by G and the postern by P. Map by M. Suha 2014.

[458] Dakaris 2000, 6–7 states that the site is located 22 km south of Ioannina. My distance measurement was acquired from Google Earth.

[459] I visited the site in December 2013. Together with my wife Johanna Yläranta-Suha, we conducted a total station mapping of the enceinte, visual documentation, and site photography during two working days.

The fortress occupies a low hill to the northeast of the cult center, the oracular "sacred house", *Hiera Oikia,* around the Sacred Oak, the council hall, *Bouleuterion,* and the huge theater built into the southern slope. The enceinte is approximately pentagonal in shape, with long parallel sides running from the southwest to northeast. The southwestern short side is chevron–shaped, consisting of two sections that form a shallow V, while the northeastern side is straight with two jogs at the southern end. In addition to the two jogs, the circuit is enfiladed by nine towers on three sides, while one uncertain tower may or may not be located in the south.[460] The circumference of the walls is 750 m, covering an area of 3.4 ha.[461]

The curtains are compartmented by crosswalls, the masonry is quarry faced ashlar and trapezoidal, and all the corners are drafted. All towers are irregular quadrangles, each with an individual shape. All have hollow ground stories, surrounded by walls ca. 1 m thick.

The frontal main gate is located in the middle of the northeastern curtain, flanked by large towers on either side. The gateway was situated at half the depth of the adjacent towers, as indicated by two sets of jambs. The more robust outer pair has an opening 2.7 m wide. Peculiarly, only 0.4 m behind the first pair is another pair of flimsier jambs, flanking an opening ca. 2.9 m wide (Fig. 53). The gateway was excavated in 1955, revealing that the double-leaved gate stood behind the smaller inner pair of jambs. The excavator hypothesized that the space in between the two pairs of jambs would have held a portcullis.[462] I do not think that this is the case here, as the 40 cm distance between the pairs is just too large to hold a portcullis with a probable thickness of up to 20 cm at best. Instead, the space between the jambs could have been only partly covered, and thus actied as machiolation, with "murder holes" enabling something to be dropped on top of the would-be assailants trying to break through the gate. No remains connected to the closure of the gate, its pivot holes or its covering can be seen on site today.

[460] In the maps, a tower has been drawn in the middle of the southern curtain. I could not see traces of such during my visit in December 2013, but I could have missed the scanty remains as I prioritized documenting the walls in my limited time on site.

[461] Dakaris 1993, 34.

[462] Evangelides 1960, 173, pl. 59β.

Figure 53 Dodona, the northeastern gate. The two sets of jambs, the outer on the right and the flimsier inner pair on the left. The gate would have stood where the measuring stick is. View toward the north–northwest. Photo M. Suha 2013.

In his dissertation, Dornisch was not sure about the covering of this gate, as it is not included in his list of vaulted gates, but as a special case with marginal notes.[463] To my mind, the openings between the jamb pairs could have been spanned by stilted true arches, if anything; both sets of jambs appear too flimsy to stand the immense weight of huge monolithic lintel slabs, or a pair of very large blocks with carved undersides forming a roundhead corbel or semi-corbel. If covered by a true arch, the thicker outer pair of jambs could well have supported the heavy stone parapet, while the flimsier pair with a slightly wider opening would have borne only the weight of the wall-walk stone slabs or mere planks spanning the corridor. As described above, the space between the different pairs of jambs could have had holes enabling the last-ditch defense of the wooden gate behind the inner pair, by enabling objects to be dropped on the attackers.[464]

In the southwestern corner of the enceinte is the second gate, a tangential one opening southeastward. The gateway is located between the southwestern corner tower and a projecting wall arm on its northeastern side. The gate is 3.0 m wide, located at the inner end of the corridor. One pair of jambs is visible, nevertheless, and while no details concerning the closure or covering of the gate can be seen, a stilted arch is also the most likely covering method in this gate. When Dakaris excavated the gate in 1963, he recovered both rectangular

[463] Dornisch 1992, 65–66.

[464] Cabanes *et al.* 2008, 102–103 hypothesize that the SE gate of Phoinike, which closely resembles this gate complex, would have been a "gate-tower" with a chamber located above the corridor covered by vaulting. Perhaps this gate also had such? Due to the current state of the remains the hypothesis is impossible to verify, however.

bronze slabs on which the pivots of the gate leaves turned, and on the left side he also found the bronze pivot shoe protecting the wooden pivot.[465] In the middle of the southern curtain is a postern opening towards the area between the bouleuterion and the *hiera oikia*.[466] A locking bolt hole 10 cm square is visible in the eastern side wall of the corridor, but nothing remains of the covering of the opening. All methods of covering are equally possible in this postern.

The dating of the enceinte has varied from the latter half of the 4th century to the reign of Pyrrhos.[467] Large towers are located with short intervals across the northern half of the enceinte, which points to a time when the enemy was expected to field a variety of siege equipment and were capable of conducting a long-standing siege. Furthermore, the towers have hollow ground stories with an average wall thickness of ca. 1 m, indicating a probable 3rd-century date. During Pyrrhos' reign, Dodona on the whole seems to have experienced a wave of building activity, with the remodeling of the *Hiera Oikia*, the construction of the temples of Herakles, Themis, and Aphrodite, the *Bouleoterion*, and the enormous theater. [468] The retaining walls of the theater are supported by trapezoidal masonry identical to that used in the fortress, with projections reminiscent of towers or bastions. Thus, I agree with the Pyrrhic date for the fortress.

Agios Donatos, a small fort located in the Kokytos River Valley in the same eastern foothills of the Paramythia range as Elea, which is located some 5 km to the north, was studied in Papers I, II, and V.[469]

The fortifications consist of curtains along the south and east sides, but the continuous sheer cliff face in the north requires no man-built walls. The curtains are 1.9–3.4 m thick, being thickest in the southwestern end where there is nothing but a straight curtain wall, and thinnest at the east end where there are additional defensive features: two jogs in the southeast, and a large tower some 25 m northeast of the jogs. Access to the fort is provided by two gates, one in the northeast and the other in the southeast (Fig. 54). While there

[465] Dakaris 1965, 151–152.

[466] A mistake in Paper IV, 25–26. Due to a misunderstanding of Dakaris' excavation report of 1963, I wrote that the bronzes were found in the postern instead of the SW gate. This led to a false claim that the postern would have had two-leaved doors, which is erroneous. In reality, the postern would have had a single-leaved door ca. 1.7–1.8 m wide, turning on one pivot located behind the jamb in the northwestern side. Both the design and the dimensions are identical to the two posterns at the Gitana lower town circuit.

[467] Older dating according to Dakaris 1993, 34; the Pyrrhic date in an earlier study by Dakaris –not clear which –but cited by Hammond 1967, 583–584, 660.

[468] Dakaris 1993, 14–31.

[469] The fortifications were studied by the Thesprotia Expedition from 2005 to 2008. I participated in all activities on site and wrote my M.A. thesis on the enceinte.

might be one compartment wall visible at the western end of the south curtain where it collapsed, the presence of others is impossible to verify.

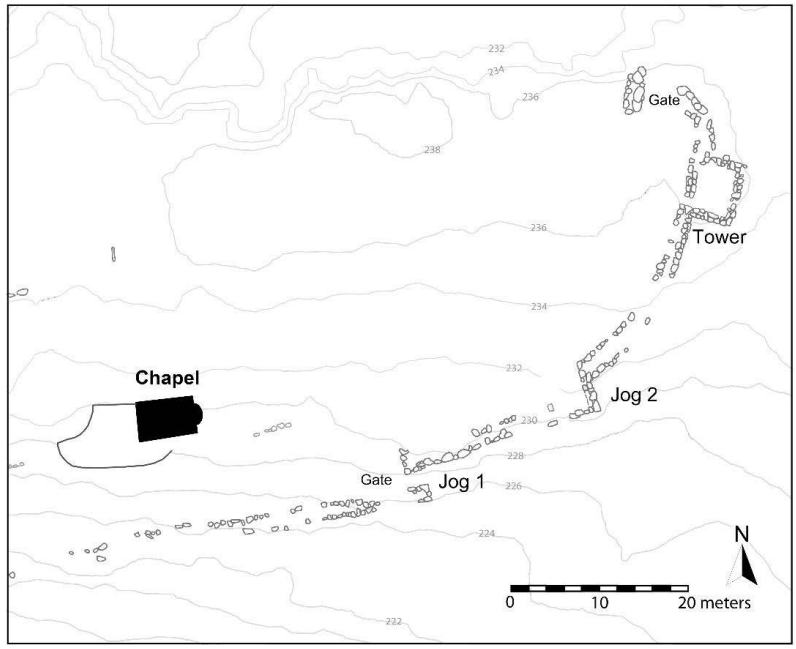

Figure 54 Agios Donatos, plan of the defenses on the eastern side of the fort. Map by M. Suha 2009, after the site map by Jari, Tuula & Aleksi Okkonen 2005.

Located on a wide, gently sloping saddle, the eastern end of the enceinte is dominated by a rectangular, hollow-based tower. The walls of the ground-floor chamber are built of two faces with no infill, and are bound by irregularly placed headers. The outer faces of the tower are built of polygonal masonry, with more quadrangular blocks placed in the corners. The inner faces of the tower walls are built of more irregular blocks with many keyed, somewhat L-shaped blocks anchored against the slope. Small triangular plug stones are also frequent in the inner facing. In the southwestern corner of the chamber is a door.[470]

The southeastern sector of the circuit is defended by two jogs. The flank of Jog 1 is pierced by the 1.9 m wide southeastern gate, and the face of this jog consists of a straight south curtain running all the way to the western tip. The face of Jog 2 measures 22 m with a flank of 4.4 m. The masonry in the face of Jog 2 is coarse, with several large plug stones amongst the larger blocks. This is the only location in the whole enceinte where a stretch of the projecting footing course is visible. A crude, rounded vertical groove has been cut into the

[470] For an updated reconstruction drawing of the eastern approaches to the fort, see Appendix III.

facing and the whole wall has bulged outwards, and appears to be on the verge of collapse (Fig. 55).

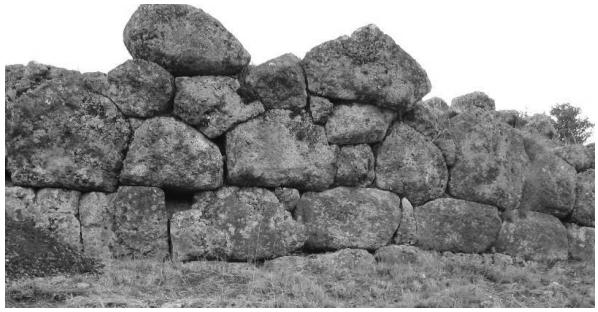

Figure 55 Agios Donatos, the rough masonry constituting the face of Jog 2. Note the frequency of plug stones, some fallen out. Looking north. Photo M. Suha 2005.

Within Jog 2 there is an interesting feature. The ground level of the inside of the fort is some 1.5–3 m above the downsloping external ground level, as the curtains also act as retaining walls. The excavation of the corner in 2008 showed that the lower part of the masonry in the corner only had one skin of large blocks supporting a loose fill of fist– to head– sized stones with no soil in between (Fig. 56).[471] On top, the upper part of the wall then has a normal double-shell structure. However, the still-preserved east flank of Jog 2 is different from the 2.4 m thick masonry of the adjacent curtains in being only half the thickness, and is thus reminiscent of the tower walls. The south side walls return to a normal 2-meter thickness after 4.12 m.

Figure 56 Agios Donatos, Jog 2. Visible are the single-shell structure of the bottom of the wall at the right, the loose all-stone fill in the center and the double-shell structure of the upper curtain on the background. Looking east. Photo M. Suha 2008.

[471] Cf. the filling in the battery and the towers at Kastri Rizovouni and the tower of Kioteza.

The evidence pointed to two different options having existed here. The first possibility is that this was an enclosed, square structure resembling a tower but only projecting on the eastern side. If the corner was surrounded by similar walls some 1 m thick, perhaps two superimposed chambers some 4.12 m square with a floor area of 17 m² could have been located here, with the corner covered by a pyramidal roof.

More likely, the thin walls could be explained as a modest multi-story curtain open to the elements, with a pair of inward-splaying firing slits opening through the narrow curtain walls toward the east and south (Fig. 57). Thus, there would have been apertures not only on the wall-walk level as usual, but also on the inside ground level, adding to the protection of the approaches to the southeastern gate. As the curtain walls in the corner were only some 1.1 m thick and the parapet above would have taken up half of that, it would have been necessary to widen the wall-walk with wooden scaffolding known as *ikria*.

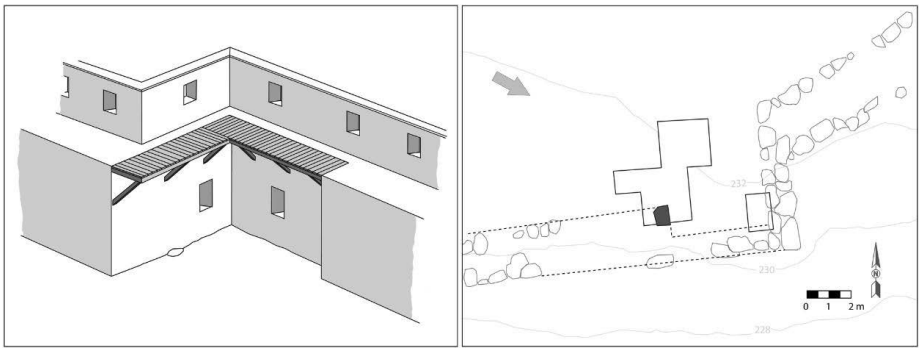

Figure 57 Agios Donatos, Jog 2. Hypothetical reconstruction of the multi-story curtain with shooting apertures on the ground level, as well as on the battlements widened by *ikria*. The dark gray lined areas are the excavation trenches. Drawing by M. Suha 2009.

Opening through the flank of Jog 1 toward the east–northeast is the tangential southeastern gate. The gateway was excavated down to the steeply sloping bedrock, however no details on the gate or its closure mechanisms were found, except for a very shallow cutting on the north side, which could possibly have held either a threshold block or a footing slab for the gate uprights and the pivot hole. The approaches to the gate are protected by both the flank and the face of Jog 2, as well as the flank of Jog 1. In the northeast is the second gate, but it is in extremely poor shape, the only remains being a stretch of the western side wall running to the edge of the north cliff. The remains suggest that in order to reach the gate, those approaching it would have been forced to traverse the ground between the precipice to the north and the fortifications on their southern, left hand side, then turn 90 degrees to the

left to enter the gate with the enfilading wall now switching to their right (and unshielded) side.

The masonry throughout consists of medium polygonal blocks with quarry facing; in the corners, the blocks assume a more rectangular shape. The joints in the eastern tip and along the western parts of the south curtain are tight, but as stated the southern wall of Jog 2 is much coarser, with careless seams and frequent plug stones. All of the corners have drafting, and close to the southeastern gate there is a crude vertical groove. Within the fortifications, there are several single-shell terrace walls built parallel and perpendicular to each other, of similar polygonal masonry as the fortifications.

Previous research has not dated the fortifications. The Thesprotia Expedition conducted surface surveys on site and excavated the gates, Jog 2, and the tower between 2005 and 2008. Unfortunately, despite the huge number of finds yielded by the trenches, it became obvious that the majority of finds were not connected to the construction or the original use of the fort, but to the Roman re-use of the site as a large, opulent *villa rustica*.[472] At the time I wrote my M.A. thesis on the fort, three coins and one lamp fragment, all found within the tower and datable between 399 and 149 BC were the only finds that could be connected with the use of the fort.

Using the wall typologies and chronologies of both Scranton and Randsborg which at the time seemed usable, I discerned different stretches of masonry in Agios Donatos that were comparable to Randsborg's Types 8, 9, and 11, all of which he dated to 350–250/200 BC.[473] Based on the knowledge of the time, I also referred to the presence of drafted corners which Hammond argued were a feature of the latter half of Pyrrhos' reign (i.e. 280s–270s BC).[474] Based on the few datable finds and features in the design such as the hollowness of the tower and the presence of drafted corners, I dated Agios Donatos to the reign of Pyrrhos. Most likely Agios Donatos could be considered first and foremost as a fortified refuge for a nearby unfortified settlement, of which there were many in the Hellenistic Kokytos Valley.[475]

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[472] In-depth analysis of the excavation results in B. Forsén & M. Suha, "Tower Stratigraphy on Agios Donatos", in B. Forsén (ed.) *Thesprotia Expedition IV. Region Transformed by Empire* (PMFIA XXIV), Helsinki 2019, 299–316. For the villa rustica, see E-M Viitanen's "The Roman Villa and Late Medieval Burial Ground of Agios Donatos" in the same publication, pages 243–274.

[473] Type 8 dated to ca. 300–275 BC, Type 9 to 275–250 BC and Type 11 to 350–275/200 BC, according to Randsborg 2002, 216–227.

[474] Hammond 1967, 584. This, however, is outdated: the drafted corners are a common feature in early walls and have also been found in Kassope, see above.

[475] Within 1.2 km from Agios Donatos, on the valley floor, there are three Classical–Hellenistic village sites: PS 29, PS 30, and PS 48. In a broader radius of ca. 3 km there are three more: PS 35 Gephyrakia, PS 36 Mavromandilia, and PS46. In addition, within the same 3 km radius there are six Classical–Hellenistic farmsteads, PS 31, E 9, PS 44, PS 37, E 26 and PS 49. For information on each, see Forsén *et al.* 2011, 97–102, 116–119.

Paper II also studied the neighboring fort of **Kioteza,** located less than a kilometer south on a conical hill with steep sides. The fortifications concentrated mostly on the eastern and northeastern sides, where the hill is joined to the Paramythias mountain range by a saddle. The fortifications have badly deteriorated; only a single corner with five masonry courses rises up to 2 m high. For most parts of the enceinte, only the tops of blocks are visible amongst the prickly vegetation (Fig. 58).

Figure 58 Kioteza, seen from the southeast. Only one corner with five masonry courses, barely visible in the middle of the photo, is standing. The fortifications run toward the right, following the edge of the escarpment and curve toward the tree in the upper right hand corner. Photo M. Suha 2005.

Dakaris described the site as having a circumference of 250–300 m, with the fortifications built of "isodomic masonry" concentrated on the northeastern side.[476] In 2008, two locations along the fortifications were excavated. It turned out that the fortifications consisted of a rectangular structure, either a tower or a bastion in the southeastern tip, from which the walls then run in a curving course toward the west, rising towards the peak. Approximately half way along the length is a shallow jog enfilading a postern.

One trench was sunk into the tower/bastion. The foundations were built of a single outer facing of large rectangular blocks fencing in a fill of loose stones.[477] On the inside ground level, a single polygonal block fallen on its side was visible, having originally formed a part of the back wall of the chamber.

[476] Dakaris 1972, 138.

[477] Cf. the fill of Jog 2 in Agios Donatos and the towers at Kastri Rizovouni.

The chamber floor would have been located some 2 m above the external ground level (Fig. 59). Some 2 m north was another block belonging to the inner face of the curtain. Between these blocks was a gap, which might have been a doorway leading into the chamber. The scanty remains allowed for the original size of the structure to be deduced as approximately 6 by 6 m, and most likely a tower, with its northern side jutting out some 3 m from the external face of the curtain.

Figure 59 Kioteza, tower/ bastion. On the right foreground is the chamber back wall block, on the left is a block belonging to the curtain wall. The still-standing external corner is at the top. View towards the north. Photo M. Suha 2008.

The curtain wall runs in a shallow curve towards the northwest, terminating in a postern, the sole entrance. The western tip of the curtain seems to have had a small thickening that enfiladed the curtain and the postern merely by one meter. On the other side of the opening, the curtain was thicker for the first couple of meters, after which the thickness was reduced. The wall terminates in a large stone heap near the summit, after which all traces disappear (Fig. 60). A second trench was sunk in the postern. The width of the corridor splayed from the outer edge toward the inside. The excavation uncovered a thin layer of packed whitish gravel in the lower part of the trench, interpreted as the road level in the opening. The trench revealed that the masonry of the fort was predominantly polygonal, unlike what Dakaris described. The blocks originate on site, and their facing treatment could best be identified as a quarry face. In the only preserved corner of the tower is a very faint corner drafting.

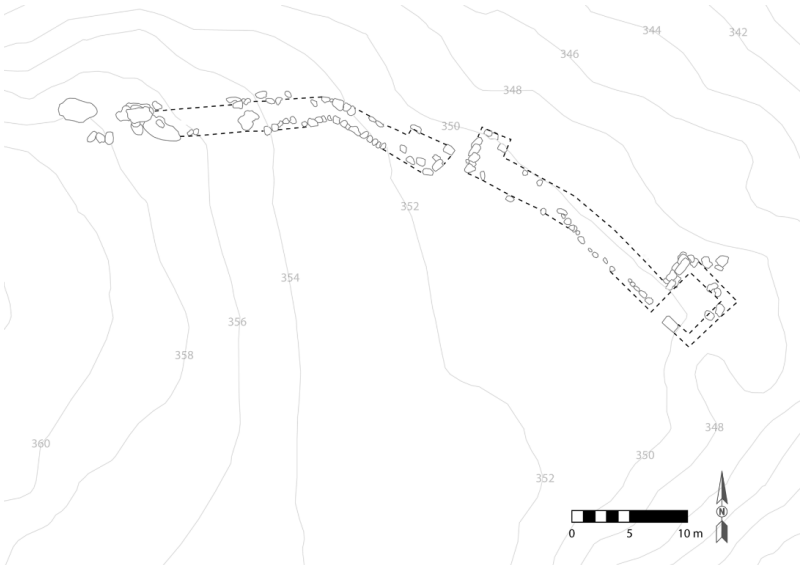

Figure 60 Kioteza, the preserved stones on site and the most likely trace of walls in the dashing. Plan by M. Suha 2008, revised from the site map by Jari, Tuula & Aleksi Okkonen 2005.

Previous research had not dated Kioteza; Dakaris merely classified it as a Hellenistic site. Unfortunately, the excavation did not clarify the situation. The few tile and pottery fragments yielded by the two trenches were worn, rounded, and undiagnostic, showing no datable features. Based on the structure of the tower and the scanty traces of masonry on site, I dated the fort to the first quarter of the 3rd century BC.

Looking back at the evidence eleven years later, now I am not so sure. To begin with, it would be strange to have two contemporaneous forts so close to each other. Looking at the minuscule size and the lofty location of the remains, the site could perhaps best be regarded as a *phryktorion,* a small lookout post housing only a small detachment.[478] Another possibility concerning the identity of Kioteza dawned on me after reading Marie- Pierre Dausse's studies of Molossian sites. Being a very small fortified site situated high up the mountain face along a route leading from the valley floor to a high pass crossing the Paramythias range and leading on to Souli Valley, it could also have offered a safe resting place for shepherds and their flocks during the crossing.

Concerning the dating, there is just not enough evidence to date the scanty remains with any accuracy. The remains have the features of an "ancient" Greek site, being built of two faces of large polygonal blocks with central filling,

[478] Dausse 2011a argued that similar small fortifications in lofty positions in the Tsoumerka region in southwestern Molossia could perhaps be regarded as safe havens for pastoralists and their flocks when moving between summer and winter pastures. Perhaps Kioteza also?

but other than that nothing certain can be said. The lookout position could well have pre-dated the larger site at Agios Donatos, perhaps being, some sort of outlying lookout station of Elea built during the 4th century BC; but it could just as well be a product of the late 3rd century BC when Aitolian and Illyrian raids became ever more likely. If, on the other hand, the enceinte was built as a safe resting place for shepherds, the dating could be anything from the early 4th to the late 3rd century BC. To conclude, today I would merely state that the scanty remains suggest a construction date during the 4th or 3rd century BC.

The disputed site known as **Nekyomanteion** is located some 13 km east–southeast of Parga at the southern tip of a low spur rising above the Acheron River.[479] In antiquity, to the east of the ridge was a body of water known as the Acherousian Lake, into which the waters of the Acheron and Kokytos flowed, while to the west was a large sea inlet known as Glykys Limen, Sweet Harbor. Upon excavating the site in the 1950s and 60s, Dakaris argued that the site should be identified with the Nekromanteion, the Oracle of the Dead, which is claimed to have existed in the vicinity of the Acheron and its confluence with the Kokytos. This has since been disputed by Dietwulf Baatz, who identified the remains of seven catapults amongst the finds. He identified the site as a *Turmgehöft,* a fortified noble's residence, or a small fort.[480]

The site consists of a complex of low, thin-walled storage facilities surrounding a sturdily built, square central tower, both once covered by superstructures of sun-dried mudbrick. The central tower is built of very carefully cut polygonal masonry. The blocks are of medium size, with some quarry face as well as broached work[481] facing treatment. Inside is a large central room with a flight of stairs, flanked by three smaller rooms on either side. Underneath the central room is a storage space cut into the bedrock, covered by a series of fifteen narrow arches.[482] The floor of the central room is in turn built of stone slabs spanning the backs of the arches.

The only access to the central tower is provided by a doorway in the middle of the south side, with the entrance covered by a still intact segmental arch. To its south is a labyrinthine entrance complex consisting of a winding corridor with two identical segmental arches (Fig. 61), protecting the tower door. The intact arch is some 0.3 m thick, and the remaining 3 m of the corridor is covered by five large stone slabs. There are large springers on both sides, but the voussoirs and the keystone are smaller in size and identical to one another so that all the radial joints in between originate from the same spot. The tooled vault facing is ca. 0.5 m high. All of the surfaces in connected with the entrance

[479] The information concerning both Bouthroton and Nekyomanteion was procured from the research literature; I did not apply for any search permits for either site, and thus did not measure anything. I have visited both several times, and all of the photos herein were taken by me.

[480] Baatz 1982, 213; Baatz 1999, 153–155.

[481] Quarry face with downward slanting grooves cut by chisel. See also Chapter 3.5.

[482] Angeli *et al.* 2015, 21–32; Baatz 1982, 213 and note 12.

are tooled, and the smooth surface continues in the jambs all the way to the floor, contrasting from the walls. The metal-clad door located behind the arch is double leaved, the pivots turning in sockets that were found in the topping and floor slabs.[483] The labyrinth in front of the entrance was built in two stages; first the U-shaped western half right in front of the entrance, ending in an identical arch. Soon thereafter, the labyrinth was continued eastward by adding a winding corridor reaching the east wall of the main tower. A third identical arch was built at the external end.

Figure 61 Nekyomanteion, south side of the central tower. In the foreground is the second arch in the "maze", the intact central tower door arch is visible in the background. View toward the northwest. Photo M. Suha 2004.

But why was a fortified site built here? Whereas Dakaris insisted that the site is the Oracle of the Dead, Baatz argued for it either being a fort, a fortified farmstead, or a noble's tower house, while the newest and very interesting interpretation by Björn Forsén argues quite convincingly that the complex was a fortified trading station at one of the best harbors in the whole of Epirus, i.e., the junction of the *Glykys Limen* and the Acherousian Lake.[484]

While perhaps being the best theory on the function of the fortified site, Forsén's theory was published after the original version of this manuscript was written and initially submitted, and thus I will stick to my own interpretation.

I have thought of the site as being a *phrourion* guarding the waterway below, a strongpoint that would also have offered some storage space for the most valuable material handled in the harbor somewhere in the vicinity. This is because the site is located at the southern tip of a ridge line, on a commanding position above the modern courses of the Acheron and the Kokytos. To the west the location is flanked by a lower ridge line stretching further to the south (Fig. 62).

[483] Dornisch 1992, 211–214.

[484] Forsén 2019, 7–11.

Figure 62 Nekyomanteion at the top center. To its southwest is the lower, southward stretching tip of the ridge, now covered by houses. The Acheron meanders amidst the trees in the bottom of the photo and the Kokytos on the right side. Image © 2019 Maxar Technologies.

As such, the fortification is in a strategic position, overlooking the narrowest part of the plain and the confluence of the rivers below. In antiquity, both rivers first flowed into the Acherousian Lake to the east of the site, which in turn discharged into the *Glykys Limen* via a navigable waterway just south of Nekyomanteion. This would have enabled ships to sail into the lake protected from the westerly gales by the ridge line, and anchor closer to the large city of Pandosia located to the east.[485] This entry would have been guarded by the *phrourion* of Nekyomanteion, both by the garrison housed within as well as numerous catapults, the remains of seven of which were found on site. On the seaside, the low ridge jutting slightly further southward would have offered some protection to the fort by hindering approach attempts while also being in the firing range of the catapults. The original square tower forming the core of the site soon had additions built around it, with storage and living spaces expanding the final size of the fort to 62.4 by 46.3 m, and thus it would probably have been capable of housing a much larger garrison than 50, the assumed size of garrison in the much smaller fort of Malathrea.

According to Baatz, there are five phases in the walls, with the first and the second being of importance to the present study. He dated the central tower and the western half of the labyrinth in front to around 300 BC, whereas the eastern addition of the labyrinth belongs to the second phase, in the first decades of the 3rd century BC.[486] I agree with his dating sequence.

[485] Kastri Acherontas/Pandosia, number 20 in Appendix II.

[486] Baatz 1999, 151–152.

Bouthroton, Butrint of today, is located 14 km south of the harbor town of Sarandë in southern Albania. The earliest permanent occupation on the acropolis has been dated to the Archaic period. On the south side of the summit are stretches of polygonal walls, which were previously regarded as being the earliest fortifications on site.[487] At a later stage, the base of the hill was surrounded by a wall circuit built of large trapezoidal masonry, the enfilading of which is provided solely by occasional jogs; there are no towers. Six gates pierce the walls in the west, south, and north. Located in the northeast are two intact semi-corbelled gates, the Scaean or Lake Gate and the Lion Gate.[488]

The frontal Scaean Gate is wholly intact, opening northward across the curtain near the northeastern corner of the enceinte. It is only flanked by a single jog on its east side. The inward–splaying corridor ceiling is semi–corbelled with decorative convex consoles.[489] Halfway across the corridor are the footing blocks to receive the wooden uprights and pivots of the gate, which also correspond with a step up in the roof of the corridor (Fig. 63). Square locking bolt holes are also visible in the side walls of the corridor.

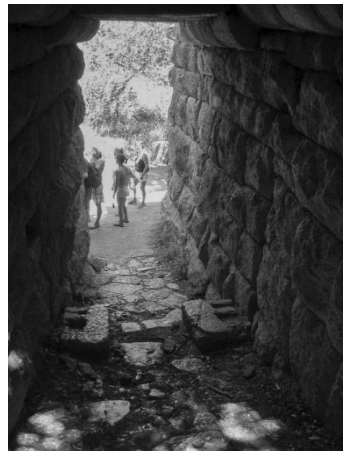

Figure 63 Bouthroton, the Scaean Gate, seen from the inside out and showing the intact semi-corbelled ceiling with convex consoles, the footing slabs of the wooden uprights, and pivots of the gate. View towards the north. Photo M. Suha 2005.

[487] Ceka 1999, 54; Karaiskaj 2009, 32–33. This was also my view upon writing Papers IV and V, based on the sources mentioned. This has since changed; Greenslade *et al.* 2013, 48, 50 have shown that the archaic polygonal walls on the acropolis are retaining walls for a sanctuary above, not defensive installations.

[488] The Tower Gate was not included in the features examined in Paper IV. For that, see Chapters 3.3, 3.4.2 and 3.4.3.

[489] Paper IV, page 7 has a typing error in the description of the gate: the text claims that the corridor *tapers* toward the inside, although it should have read *splays or widens*.

The Lion Gate, located approximately 150 m to the west, is named after a re-used frieze block depicting a lion devouring a bull, set in its current place during a medieval alteration of the gate. Behind the newer facing, the original structure of the gate is visible. The gate opens eastward across the flank of a jog, its corridor tapering inward. The intact ceiling is semi-corbelled with diagonal consoles (Fig. 64). On top of the consoles, the ceiling is built of two layers of large slabs, between which is a hollow. The upper ceiling, relieving the pressure exerted by the wall above is supported by decorative, convex consoles at both ends.[490] The masonry of the walls is large pseudo-isodomic trapezoidal with quarry face. All of the corners are drafted, and close to the Scaean Gate, there is a vertical groove in the facing of the curtain.

Figure 64 Bouthroton, the Lion Gate. Close-up photo showing the re-used frieze after which the gate was named, and the original diagonal consoles. View toward west. Photo M. Suha 2005.

In the southwestern sector of the enceinte is the Asklepeion Gate. The original gate is a frontal, unflanked gate opening through the curtain. It only stands a couple of courses high today, and thus nothing of its covering or closure details are preserved, but it is likely that it was covered by vaulting.

Later, a thin-walled, irregularly shaped outer enclosure was added in front of the gate with a new arched gate in its southwestern wall. The newer enclosure walls are ca. 1 m thick, built of two faces of quarry faced trapezoidal blocks bound by regular headers and no infill. Contrasting with the rough facing treatment of the wall, the irregular quadrangular blocks forming the jambs of the gate have tooled faces with a very shallow rusticated panel in the center. The stilted arch on top, its lowest voussoirs still in place, is built of thoroughly tooled blocks. The vault facing is thus smooth, but the extrados was accentuated by a projecting hood molding (Fig. 65).

[490] Hammond 1967, 104; Rathke 2001, 22–24; Karaiskaj 2009, 38–40.

Figure 65 Bouthroton. The Asklepeion Gate in the background, behind the brick pillar. In the foreground is the outer courtyard and the new gate, its damaged hood molding barely visible along the outer sides of the lowest voussoirs. View towards the north–northeast. Photo M. Suha 2005.

Earlier research dated the lower town wall, including the Scaean and Lake Gates as well as the original Asklepeion Gate, as belonging to the second phase of fortification, in the 4th century BC. The third phase, during the late 3rd century, would have seen the addition of the Tower Gate in the southeast and the outer courtyard in front of the Asklepeion Gate.[491] A slightly newer interpretation of the building sequence changed the phases slightly, so that the second phase, dated to the first half of the 4th century BC, would have included the original lower town circuit and the semi-corbelled gates in the north, but neither the Asklepeion nor the Tower Gates. The third phase would then have consisted of modifications to the existing fortifications during the 3rd century BC: the addition of the Tower Gate in the southeast and a new stretch of wall, the *diateichisma* in the southwest. The diateichisma would have included the Asklepeion Gate.[492] The outer courtyard in front would only have been added during the fourth phase, in the 2nd century BC.[493] This sequence established by Karaiskaj 2009 seemed logical and trustworthy, and thus I followed and cited it in Papers IV and V.

The datings have since changed, however. The newest interpretation of the building sequence and the dating of the different phases is summarized by

[491] Çeka 1999, 37–38, 54.

[492] Karaiskaj 2009, 50.

[493] Cabanes *et al.* 2008, 73–76.

Hodges in Butrint 4. According to Hodges, the summit of the acropolis was occupied by a sanctuary with polygonal retaining – not fortification – walls in the 8th to 6th centuries BC. By the early 4th century BC the sanctuary would have grown, with buildings added on the hillside in the southwestern corner. The site would still have been completely unfortified at this stage. The whole lower town enceinte, and all the six gates therein, is now regarded as being Hellenistic, a product of the late 3rd century BC, all built in one and the same phase.[494]

The lower town walls are built of bulging, quarry faced trapezoidal masonry, with drafted corners and vertical grooves. The two still-intact gates are semi-corbelled; in the southeast is the Tower Gate with an unknown gate covering; presumably it would have been covered by a true arch. The gateway had a portcullis in front of the normal two-leaved gate. In the southwest, piercing a late type abbreviated curtain, is the Asklepeion Gate which was most likely covered by a true arch. The presence of these features supports the newest dating sequence, which is the most logical, and I can make no additional remarks on the dating.

[494] Hodges 2013, 7–10.

5 CONCLUSIONS

This study has been a long process that has attempted to establish a chronology for thirteen Epirote fortifications, utilizing the architectural evidence available to achieve the result. In the first papers the outdated masonry typologies still played a major role, as I was unaware of their abandonment. To compliment the dating evidence, the different features of the fortifications and their design were used in all of the papers to gain additional clues as to their building periods.

Archaeological material from the excavations conducted firsthand was only available in two cases, Agios Donatos and Kioteza, and unfortunately the results were inconclusive. In other cases such as Elea, Gitana, and the exceptionally thoroughly excavated fortress of Pyrgos Ragiou, the published material is extensive but ranges from occasional Paleolithic stray finds up to Ottoman material, although the vast majority of the material is broadly Classical–Hellenistic.

Building inscriptions that could indicate a time of construction are not present in any of the studied utililtarian, undecorated Epirote fortifications, nor am I aware of any Classical–Hellenistic Epirote site that would have had such.

Historical sources on the establishment of Epirote settlement fortifications are also rather scanty, consisting mostly of brief mentions of the earliest colonies such as Elatria or Argos Amphilochikon, or of the largest cities such as Ambrakia and Antigonea. Some indirect evidence of the establishment of some settlements is provided by the appearance of a new regional coinage, as seen in Kassope and Elea during the mid-4th century BC, but that occupation date does not necessarily correlate with the fortification of a site. Some sieges are reported by historians, such as the Macedonian siege of Eurymenai in 313 BC, the Roman capture of Ambrakia 189 BC, and their sieges of Passaron, Tekmon, Phylake and Orraon in 168 BC.

The specific features of the military architecture of the sites, the fortifications and their various components (i.e., curtains, towers and openings, as well as the details of the masonry) were examined in all cases and were analyzed as thoroughly as possible.

Combining all of the available evidence has yielded a general picture of the process of fortifying Epirus, which was slow and sporadic at first, but ever increasing in pace from the latter half of the 4th century BC onward, resulting in well over a hundred fortified sites eventually emerging all over the area.

While the early Elean and Corinthian colonies in the Epirote region were founded during the 7th and 6th centuries BC, most were apparently not fortified until much later. Ambrakia received its wall circuit during the course of the 6th or early 5th centuries BC. The first walls were erected on the acropolis of Bouthroton during the 7th or the 6th century BC, but the polygonal Archaic

walls were mere terrace retaining walls, not fortifications. In the south, Argos Amphilochikon most likely had a wall circuit by 430–426 BC, while the first phase of the early colony of Bouchetion has also been dated to the 5th century BC.

The urbanization of Epirus, inspired by the Macedonians and perhaps also by the neighboring Acarnanians, but carried out by the local semi-nomadic tribes as they started their more sedentary life, truly began around the mid-4th century BC. In a relatively short time, a plethora of sites were fortified with impressive walls. Among the earliest circuits are Kassope, Kastri Rizovouni, Elea, Ammotopos, and Dymokastro. To the north, the enceinte of Malçan belongs to this stage. Batiae, despite being one of the early colonies, was apparently only fortified around the late 340s BC after the Macedonians had captured the unfortified site and handed it over to the Molossians, who then built the walls around it. Other early enceintes datable to the latter half of the 4th century include Lygia A–C, Çuka e Aitoit, and enceinte A of Phoinike.

No doubt the veterans of the first Epirote army fighting overseas under King Alexander the Molossian in the late 330s BC would have absorbed ideas from the Italian fortifications, bringing them over to Epirus on their return home in 331 BC and soon thereafter. Gitana, Pyrgos Ragiou, and most likely Kastritsa and Gradisht/ Byllis belong to this phase. Megalo Gardiki could also belong to this stage, although the excavated material does not explicitly support this hypothesis.

The most intensive fortification building boom undoubtedly took place during Pyrrhos' reign, the king known for his dedication to all things military and the fortification of even the marching camps of his troops, a very uncommon feat at the time. This is the period to which the majority of the forts and signal/lookout towers belong. Examples of this phase include the initial stages of Nekyomanteion, Agios Donatos, Ambelochori, and Tsouka, as well as the Dodona Acropolis. The forts of Kastraki of Agios Minas, Oreokastro/Lakhanokastro and Lekël are also regarded as Pyrrhic foundations. In the north, the large city of Antigonea –named after one of Pyrrhos' wives–was established in 297–296 BC and fortified immediately.

Prosperous times continued for some decades after Pyrrhos' death and trade brought considerable wealth to Epirus, enabling the process of fortification to continue all over Epirus. The international trade towards the west and the northwest, centered at Phoinike, flourished and brought wealth to the area on an unprecedented scale. Çuka, Çumpora, Metoqi and Dobra, four towers surrounded by small enclosures, all practically identical in layout and within 20 km of Phoinike, which I regard as fortified farms, belong to this phase. The forts of Lidiza/ Sinou, Labovë, and Despotikon were also founded in this period. Phoinike itself received a more substantial wall circuit in the form of "enceinte B", traversing the crest of the acropolis, which enlarged the fortified area considerably. As a result of the new prosperity, the population of Epirus reached an all-time high by the latter half of the 3rd century BC.

However, by the 230s BC, that luck had run out and the wealth dwindled, while bad choices in alliances and frankly idiotic blunders in foreign policy brought trouble in the form of aggressive neighbors, culminating in the loss of the major cities of Ambrakia and Phoinike in the 230s. Even though plundered Phoinike was soon regained from the Illyrian raiders by paying a huge ransom, Ambrakia remained in Aitolian hands. Bouthroton, the neighbor of Phoinike, was surrounded with a formidable wall circuit, probably as a consequence of the fate of Phoinike. The continuing scrouge of Illyrian piracy and plummeting international trade strained the Epirote economy.

The two devastating Aetolian raids of 219 and 217 BC brought about the last efforts to strengthen their defenses, either before the attacks or, more likely, as a consequence of them. While there was no longereither the need or the resources to fortify new sites, the older, already existing enceintes were modified by strengthening their defenses. This is evident in Elea and Byllis. Some smaller sites also continued to be improved, as shown by the ruins of Nekyomanteion, where the enceinte was enlarged on several occasions, even at this late stage. Apparently, the only new settlement to be fortified at this late stage was the double enceinte of Ericho/ Orikos at the southern end of the Gulf of Vlorë. As indicated by the finds at the site, the settlement had already existed by the 4th–3rd century BC, but the fortifications around it were built considerably later.

By the beginning of the second century BC, the fortification of Epirus was effectively over. On one hand, the sites requiring fortification had built their enceintes by this stage, and on the other hand, the wealth of Epirus had dwindled and faded away to history. Many factors contributed to this, but the most important were the pressure from their Illyrian and Aitolian neighbors as well as the waning sea trade with Italy.

When the Third Macedonian War began in 172 BC, the Epirotes sought to remain apart, but as the war dragged on the animosity of opportunistic pro- and anti-Roman parties tore the Epirote Alliance apart. Eventually, one year after the Roman victory at Pydna in 168 BC, Epirus itself was torn apart. Fortified centers were emptied, looted, and many had their walls torn down, some on a great scale, while some had short sections demolished. A good example of such is evident in the northeastern curtain of Elea, now merely a low pile of blocks strewn across a wide area, compared with other sectors of the circuit still standing up to 7 m high. The poor state of preservation, if not total disappearance of the fortifications in the northern corner of Megalo Gardiki, can also be explained by either the Roman siege of 168 BC or the purposeful dismantling of 167 BC. Incidentally, this site also shows signs of repair during the early Roman period, as testified by Pliakou's excavations on site. A different treatment, total dismantling, seems to have taken place at Ammotopos, another site that initially chose to close its gates to the Roman conquerors in 168 BC, although it yielded before it was truly besieged. Evidence is mounting that despite the evident looting and reduction in population –albeit not on the cataclysmic scale described by the ancient

authors –life still continued in the countryside and even in some sacked settlements. While Epirus, chiefly Molossia and Thesprotia, did lose a large percentage of its population, the whole region would not literally have been "left to the wolves". However, the building of traditional dry-stone fortifications more-or-less ceased by 167 BC, as does this study.

Did the fortification of Classical- Hellenistic Epirus follow the general trends of the Greek world or is there a distinctly Epirote fortification type? The answer is both yes and no. The general know-how of fortification building followed the general developments, adapted to the mountainous landscape and avoiding unnecessarily costly and complex structures whenever possible. In many cases the steep topography alone would have hindered the approach of a large army with a formidable siege train capable of a long-lasting siege. Sudden raids by lightly equipped enemy contingents such as pirates were far more likely, and those could be warded off even by modest fortifications.

Local stone was used to build the fortifications, quarried right on the spot when ever possible. The qualities of the commonly used limestone yielded polygonal blocks most easily, and, as Ley argued for neighboring Acarnania, the local masons had a particularly strong tradition of polygonal masonry. Due to the multi-angled shapes of the blocks, the upper blocks tended to form natural vaulting when placed "radiating like the spokes of a wheel" above the lower ones. That masonry tradition led to the independent invention of a self-supporting true arch, as first seen in the west gate of Kassope.

Advanced features in Epirote fortifications are exemplified by the great battery of Gitana on Vrysella, as well as the absurdly sharp-apexed pentagonal battery of Kastritsa, both truly formidable structures built to house a number of advanced torsion catapults.

Elea is a good example of a "typical" Epirote fortification. The formidable walls still stand high, being built of the bulging, quarry faced polygonal masonry that was so typical in Epirus, with more than 60 sites built of comparable masonry. It is also typical in having carefully built, massive fortifications, that were doubtlessly very expensive to construct, yet the enceinte also has surprisingly weak features, such as very limited enfilading capabilities in the form of a single very small tower and long straight walls designed with a passive defense in mind, as testified by the presence of only two small openings.

Of the different fortifications in Epirus, the walls of Pyrgos Ragiou revealed the most surprising feature, the presence of double outer facings in both the solidly filled curtains and towers, together with regular compartment walls binding the both outer faces, fill, and inner facing together. I have been unable to find well-dated parallels for these, or indeed any clear information on other similar constructions. In Pyrgos Ragiou, both outer faces are clearly contemporary; the outer face is not a later strengthening addition, which is a more common feature. As such, the double outer facings of the walls and towers are very interesting, and thus far I have failed to identify any comparable structures in the literature. The only comparisons I have seen

personally are the northeastern corner tower of Salamis, in Attica, and a probable one along the Kononian Walls of Piraeus, the first ones matching the towers in Pyrgos Ragiou. Time, however, ran out for the in-depth examination of this feature within the bounds of this study; hence it was left out of this dissertation. In the future, should financial support be available, this will be the aim of my future research.

REFERENCES

Abbreviations:

ADelt = Archaiologikon Deltion.
AJA = American Journal of Archaeology.
AthMitt = Mitteilungen des Deutsches Archäologisches Instituts: Athenische Abteilung.
BCH = Bulletin Correspondence Hellenique.
PMFIA = Papers and Monographs of the Finnish Institute at Athens.
OpAth. = Opscula Atheniensia.

Ancient sources:

Aen. Tact. = Aeneas the Tactician, *How to Survive Under Siege*.
Diod. = Diodorus Siculus, *Historical Library*.
Liv. = Titus Livius,*Ab Urbe Condita*.
Plut. Pyrrh. = Plutarchos, *Pyrrhus*.
Polyb. = Polybius, *Histories*.
Ps.-Skylax = Pseudo-Skylax, *Periplous*.
Strab. Strabo, *The Geography*.
Thuc. = Thucydides, The Peloponnesian War.

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APPENDIX I: INDEX OF SITES

This is an index of the Epirote fortified sites, encountered in Papers I–V, the Preface and Appendix II.

The first column lists the various names and aliases of sites, and the second column the site number in Appendix II (wherein more information on the sites is provided). The third lists where a site is discussed, in the constituent Papers I–V and the pages of the Preface. Papers are referred to in Roman numerals in bold. A page number followed by T.1–T.4 in brackets, indicates entries in Tables 1-4. Ancient names of sites are written in *italics*. In the case where the name of a site is uncertain, it is followed by question mark (?).

Name, aliases	Site Number	Paper, Pages
Abantia = *Amantia* = Ploçe	148	53, 54, 74, 75(T.2), 79, 80, 92(T.3).
Aetos = Çuka Ajtoit = Çuka e Aitoit	89	66(T.1), 71, 75(T.2), 91(T.3), 97(T.4), 107, 166.
Agioi Saranta = Santi Quaranta = Sarandë = *Onchesmos*	116	
Agios Andreas (fortifications in Preveza)	4	
Agios Giorgios (fortifications in Preveza)	4	
Agios Georgios (Gardiki Filiaton) = Gardiki Filiaton = Kastri (Gardiki Filiaton) = Pyrgos (Gardiki Filiaton) = Pyrgos tou Gardikiou (Filiaton) = Glousta(?)	85	75(T.2), 90(T.3).
Agios Donatos (in Kokytos valley) = Dragoumi (Kokytos valley) =Agios Donatos Zervochoriou = Zervochori	38	**I, II, V**. 3, 4, 14–18, 39, 44, 49–51, 75(T.2), 89, 90(T.3), 97(T.4), 100, 101, 150–154, 158, 165, 166.
Agios Donatos Zervochoriou = Zervochori = Dragoumi (Kokytos valley) = Agios Donatos (in Kokytos valley)	38	**I, II, V**. 3, 4, 14–18, 39, 44, 49–51, 75(T.2), 89, 90(T.3), 97(T.4), 100, 101, 150–154, 158, 165, 166.
Agios Nikolaos (of Klimatia)	82	
Agora = Liongati = Kioteza	37	**II.** 3, 15, 16, 18, 49, 51, 74(T.2), 90(T.3), 97(T.4), 100, 101, 155–158, 165.
Agrilovouni = *Olpae (?)*	3	

Aidonat = Paramythia Castle = *Photike*	45	75(T.2), 80, 84, 85, 90(T.3).
Akropoli Kastri Chrisorrachis = Chrysorrachi = Zagoriani = *Helikranon*	102	84, 91(T.3), 97(T.4).
Akropolis of Koroni = Kastriza	24	
Ali Pasha's Castle (Vivari)	93	
Amantia = *Abantia* = Ploçe	148	53, 54, 74, 75(T.2), 79, 80, 92(T.3).
Ambelochori = Skloupo	52	58, 59, 60, 90(T.3), 97(T.4), 166.
Ambrakia = Arta	10	23, 24, 25, 27–31, 38, 43, 50, 53, 54, 61, 63. 66(T.1), 67, 72, 74(T.2), 83–86, 89(T.3), 92, 106, 165, 167.
Ambracus = *Ambrakos* = Phidokastro	6	29, 30, 89(T.3), 96(T.4).
Ambrakos = *Ambracus* = Phidokastro	6	29, 30, 89(T.3), 96(T.4).
Ammotopos = *Orraon, Horraon, Horreum*	22	31, 66(T.1), 74(T.2), 83, 90(T.3), 137, 140, 165–167.
Anthousa	26	
Antigonea = Saraginisht = Saraginishtë	137	29, 53, 54, 63, 67(T.1), 75(T.2), 82, 88, 91(T.3), 95, 97(T.4), 97, 98, 106, 165, 166.
Argos Amphilochicum = *Argos Amphilochikon*	2	17, 24, 25, 65, 66(T.1), 68–70, 74(T.2), 89(T.3), 96(T.4), 98, 99, 165, 166.
Argos Amphilochikon = *Argos Amphilochicum*	2	17, 24, 25, 65, 66(T.1), 68–70, 74(T.2), 89(T.3), 96(T.4), 98, 99, 165, 166.
Argyrokastro = Gjirokastër Castle	136	
Arta = *Ambrakia*	10	23, 24, 25, 27–31, 38, 43, 50, 53, 54, 61, 63. 66(T.1), 67, 72, 74(T.2), 83–86, 89(T.3), 92, 106, 165, 167.
Babouri = Lia = Kastro (of Lia)	101	
Batiae = *Batiai* = Lelovo = Kastri/Kastro Rizovouni	21	**IV, V.** 23, 36, 51, 53, 54, 65, 75(T.2), 80, 83, 89(T.3), 92, 96, 97(T.4), 99–101, 107–113, 123, 140, 166.
Batiai = *Batiae* = Lelovo = Kastri/Kastro Rizovouni	21	**IV, V.** 23, 36, 51, 53, 54, 65, 75(T.2), 80, 83, 89(T.3), 92, 96, 97(T.4), 99–101, 107–113, 123, 140, 166.
Bogazi = Vagalat = Vagalati	91	60, 66(T.1), 91(T.3), 97(T.4).
Borshi = Kalaja e Borshit = Kala e Borshit = Kalaja e Sopotit =	129	

Sopoti = *Panormus (?)*		
Boucheta = Kastro ton Rogon = Kastro Rogoi = Kastro Rogous = Rogous = *Bouchetion*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Bouchetion = Kastro ton Rogon = Kastro Rogoi = Kastro Rogous = Rogous = *Boucheta*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Bouthroton = *Buthrotum* = Butrint	94	**IV.** 21, 22, 24, 28, 35, 38, 51, 55, 57–60, 61, 65, 69, 70, 75(T.2), 79, 84, 86–88, 91(T.3), 96, 97(T.4), 98, 100, 101, 161–165, 167.
Buthrotum = *Bouthroton* = Butrint	94	**IV.** 21, 22, 24, 28, 35, 38, 51, 55, 57–60, 61, 65, 69, 70, 75(T.2), 79, 84, 86–88, 91(T.3), 96, 97(T.4), 98, 100, 101, 161–165, 167.
Butrint = *Bouthrotum* = *Buthrotum*	94	**IV.** 21, 22, 24, 28, 35, 38, 51, 55, 57–60, 61, 65, 69, 70, 75(T.2), 79, 84, 86–88, 91(T.3), 96, 97(T.4), 98, 100, 101, 161–165, 167.
Byllis = Gradisht = Hekal	152	17, 19, 53, 54, 67(T.1), 74, 75(T.2), 84, 86, 92(T.3), 166–167.
Cape Cheimerion = Kastro ton Kimmerion = Kiotezi	17	
Castle of Souli = Kastro tis Kiafas	28	
Chanopoulo = Kastri (at Chanopoulo)	11	63.
Chimaira = *Himara* = Himarë Castle	131	
Chrysavgi = Veliani = *Elea*	47	**III, IV, V**. 3, 16, 17, 18, 31, 32, 35, 44, 49, 50, 51, 53, 54, 66(T.1), 75(T.2), 89, 90(T.3), 92, 96, 97(T.4), 98, 101, 113–121, 123, 158, 165, 166–168.
Chrysorrachi = Akropoli Kastri Chrisorrachis = Zagoriani = *Helikranon*	102	84, 91(T.3), 97(T.4).
Cichyrus = *Ephyra* = Xylokastro	19	
Çuka	112	57, 91(T.3), 166.
Çuke = Çumpora	113	57, 79, 91(T.3), 99.
Çuka Ajtoit = Aetos = Çuka e Aitoit	89	66(T.1), 71, 75(T.2), 91(T.3), 97(T.4), 107, 166.
Çuka e Aitoit = Aetos = Çuka Ajtoit	89	66(T.1), 71, 75(T.2), 91(T.3), 97(T.4), 107, 166.

Çumpora = Çuke	113	57, 79, 91(T.3), 99.
Dema Wall	111	24, 53, 61, 66(T.1), 91(T.3), 94, 99.
Despotikon = Paleokastro Despotikou = Paliokastro Ai Minas = *Ilium(?)*	84	75(T.2), 90(T.3), 166.
Dhrovjani = Kastris (?)	119	91(T.3).
Dishati = Qyteza	88	61, 66(T.1), 67, 91(T.3).
Dobra = Dobrat	96	57, 166.
Dobrat = Dobra	96	57, 166.
Dodona acropolis	56	**IV, V.** 21, 30, 33, 51, 55, 66(T.1), 67, 75(T.2), 80, 90(T.3), 100–101, 146–150, 166.
Doliani = *Phanote*	62	**IV, V**. 30,31, 32, 35, 38, 51, 66(T.1), 71, 75(T.2), 83, 89, 90(T.3), 97(T.4), 100, 101, 107–109, 122–123, 140.
Dourouti	76	
Dragoumi (at Kalamas valley) = Paliouri	83	
Dragoumi (at Kokytos valley) = Agios Donatos (in Kokytos valley) = Agios Donatos Zervochoriou = Zervochori	38	**I, II, V**. 3, 4, 14–18, 39, 44, 49–51, 75(T.2), 89, 90(T.3), 97(T.4), 100, 101, 150–154, 158, 165, 166.
Duka	108	
Dymokastro = Ellinokastro = Elimokastro = Erimokastro = Karavostasi = Perdhika = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Elateia = *Elatria* = *Elatia* = *Elatreia* = Paliorophoron	13	23, 50, 53, 54, 66(T.1), 74(T.2), 89(T.3), 99, 107, 165.
Elatia = *Elatria* = *Elateia* = *Elatreia* = Paliorophoron	13	23, 50, 53, 54, 66(T.1), 74(T.2), 89(T.3), 99, 107, 165.
Elatreia = *Elatria* = *Elatia* = *Elateia* = Paliorophoron	13	23, 50, 53, 54, 66(T.1), 74(T.2), 89(T.3), 99, 107, 165.
Elatria = *Elatreia* = *Elateia* = *Elatreia* = Paliorophoron	13	23, 50, 53, 54, 66(T.1), 74(T.2), 89(T.3), 99, 107, 165.
Elea = Veliani = Chrysavgi	47	**III, IV, V**. 3, 16, 17, 18, 31, 32, 35, 44, 49, 50, 51, 53, 54, 66(T.1), 75(T.2), 89, 90(T.3), 92, 96, 97(T.4), 98, 101, 113–121, 123, 158, 165, 166–168.

Elephtheri = Pyrgi	27	35, 57, 60, 90(T.3).
Eleftherochori Castle	59	
Elina = Dymokastro = Ellinokastro = Elimokastro = Erimokastro = Karavostasi = Perdhika	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Elimokastro = Dymokastro = Ellinokastro = Erimokastro = Karavostasi = Perdhika = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Ellenika = Mamakou = Ellenika tou Mamakou	35	90(T.3).
Ellenika tou Mamakou = Mamakou = Ellenika	35	90(T.3).
Elleniko = Lemiko = Tsamanda = Tsamanta	100	
Ellinokastro = Dymokastro = Elimokastro = Erimokastro = Karavostasi = Perdhika = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Embesos	8	
Ephyra = *Cichyrus* = Xylokastro	19	
Episkopiko = Kastri (Episkopiko)	55	
"Ericho" = *Oricum* = *Orikum* = *Orikos*	150	24, 30, 91(T.3), 92, 167.
Erimokastro = Dymokastro = Ellinokastro = Elimokastro = Karavostasi = Perdhika = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Eurymenai (?) = Kastritsa = *Tekmon*	77	**IV, V.** 26, 31, 33, 34, 51, 53, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 100, 101, 124–128, 145, 165–166, 168.
Faskomilia = Gourgara = Vourgara = Kastro tis Voulgaras = Nista	44	60, 61, 90(T.3).
Finik = Mal I Finikut = Mali i Finiqit = *Phoenice* = *Phoinike*	117	24, 25, 28–30, 43, 53, 54, 57, 74, 75(T.2), 79, 80, 83, 91(T.3), 92–94, 137, 140, 145, 166, 167.
Gardiki Filiaton = Agios Georgios (Gardiki Filiaton) = Kastri (Gardiki Filiaton) = Pyrgos (Gardiki Filiaton) = Pyrgos tou Gardikiou (Filiaton) = Glousta(?)	85	75(T.2), 90(T.3).
Gardiki (of Ioannina plateau) = Megalo Gardiki= Kastri (of Ioannina plateau) = *Passaron (?)* [1]	80	**V.** 6, 30, 31, 32, 33, 34, 51, 53, 54, 66(T.1), 71, 75(T.2), 83, 90(T.3), 97(T.4), 101, 140, 141–146, 165–167.
Gardiki (of Kokytos valley) = Logkates = Koutsiates = PS24	36	

[1] Traditional identification by S.I. Dakaris

Gephyra Zeta (?) = Kato Mousiotitsa	33	
Gitana = Goumani	63	**V.** 32, 35, 36, 51, 53, 54, 63, 66(T.1), 67, 71, 72, 75(T.2), 84, 90(T.3), 92, 97(T.4), 98, 101, 119, 129–135, 140, 145, 165, 166, 168.
Gjirokastër Castle = Argyrokastro	136	
Glousta(?) = Gardiki Filiaton = Agios Georgios (Gardiki Filiaton) = Kastri (Gardiki Filiaton) = Pyrgos (Gardiki Filiaton) = Pyrgos tou Gardikiou (Filiaton)	85	75(T.2), 90(T.3).
Goumani = *Gitana*	63	**V.** 32, 35, 36, 51, 53, 54, 63, 66(T.1), 67, 71, 72, 75(T.2), 84, 90(T.3), 92, 97(T.4), 98, 101, 119, 129–135, 140, 145, 165, 166, 168.
Gourgara = Vourgara = Kastro tis Voulgaras = Faskomilia = Nista	44	60, 61, 90(T.3).
Gradetsi = Megali Gotista	78	
Gradisht = *Byllis* = Hekal	152	17, 19, 53, 54, 67(T.1), 74, 75(T.2), 84, 86, 92(T.3), 166–167.
Gradishta (of Karosi) = Karosi = Qeparoi = Kasteli	130	61, 91(T.3).
Gradishta (of Rabie) = Rabie = Rabije	154	75(T.2), 92(T.3), 94, 95.
Guri I Qytetit = Përmet	140	58, 60, 91(T.3).
Hani Emin Aga	50	
Hekal = Gradisht = *Byllis*	152	17, 19, 53, 54, 67(T.1), 74, 75(T.2), 84, 86, 92(T.3), 166–167.
Helikranon = Chrysorrachi = Akropoli Kastri Chrisorrachis = Zagoriani	102	84, 91(T.3), 97(T.4).
Himara =*Chimaira* = Himarë Castle	131	
Himarë Castle = *Himara* = *Chimaira*	131	
Horraon = *Orraon* = *Horreum* = Ammotopos	22	31, 66(T.1), 74(T.2), 83, 90(T.3), 137, 140, 165–167.
Horreum = *Horraon* = *Orraon* = Ammotopos	22	31, 66(T.1), 74(T.2), 83, 90(T.3), 137, 140, 165–167.
Hundësova	128	64, 91(T.3).
Igoumenitsa Castle	64	
Ilium(?) = Despotikon = Paleokastro Despotikou = Paliokastro Ai Minas	84	75(T.2), 90(T.3), 166.
Kala e Borshit = Kalaja e Borshit = Borshi = Kalaja e Sopotit = Sopoti = *Panormus (?)*	129	

Kalaja e Borshit = Kala e Borshit = Borshi = Kalaja e Sopotit = Sopoti = *Panormus (?)*	129	
Kalaja e Kaninës	151	63, 67(T.1), 92(T.3).
Kalaja e Kardhiqit	134	91(T.3).
Kalaja e Këlcyres	141	
Kalaja e Libohovës	138	
Kalaja e Matohasanaj = Matohasanaj	146	67(T.1), 75(T.2), 84, 86, 88, 92(T.3).
Kalaja e Mavrovë = Mavrovë = *Olympe (?)*	149	
Kalaja e Mehalat = Mehala = Mehalles	97	
Kalaja e Selose = Selo = Kastro (at Selo)	105	66(T.1), 88, 91(T.3), 97(T.4).
Kalaja e Sopotit = Sopoti = Borshi = Kalaja e Borshit = Kala e Borshit = *Panormus (?)*	129	
Kalenji = Kalentzi	51	57, 90(T.3), 96, 97(T.4).
Kalentzi = Kalenji	51	57, 90(T.3), 96, 97(T.4).
Kalia = Kasnetsi	68	
Kalivaç = Kaljivuç = Leshnjë	147	
Kaljivuç = Kalivaç = Leshnjë	147	
Kalivo	95	
Kalogeritsa = Kaloyeritsa = Therakisi = *Phylake (?)*	49	31, 75(T.2), 90(T.3), 165.
Kaloyeritsa = Kalogeritsa = Therakisi = *Phylake (?)*	49	31, 75(T.2), 90(T.3), 165.
Kamarina = Zalongo = *Kassope*	14	**IV, V.** 26, 32, 51, 53, 54, 65, 66(T.1), 74(T.2), 89(T.3), 92, 96(T.4), 98, 101, 102–107, 112, 123, 165, 166, 168.
Kamenica	127	
Kara-Ali-Bey = Karalibeu = Neohori = *Maiandria*	110	43, 91(T.3), 93, 94.
Karalibeu = Kara-Ali-Bey = Neohori = *Maiandria*	110	43, 91(T.3), 93, 94.
Karavostasi = Dymokastro = Ellinokastro = Elimokastro = Erimokastro = Perdhika = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Karosi = Gradishta (of Karosi) = Qeparoi = Kasteli	130	61, 91(T.3).
Karteri = Karteriza = Kastro tou Malakinou	41	
Karteriza = Karteri = Kastro tou Malakinou	41	
Kasnetsi = Kalia	68	
Kassope = Kamarina = Zalongo	14	**IV, V.** 26, 32, 51, 53, 54, 65, 66(T.1), 74(T.2), 89(T.3), 92, 96(T.4), 98, 101, 102–107, 112, 123, 165, 166, 168.

Kasteli = Gradishta (Karosi) = Karosi = Qeparoi	130	61, 91(T.3).
Kastelio = Kastelli = Sirouno = Khouliaradhes	53	57, 90(T.3), 97(T.4).
Kastelli = Kastelio = Sirouno = Khouliaradhes	53	57, 90(T.3), 97(T.4).
Kastraki of Agios Minas = Kastritsa (of Agios Minas) = Revnikio	122	91(T.3), 166.
Kastraki Sideris = Φρύκτορια της Σίδερης = Kiouteti	69	58, 60.
Kastri (at Acheron valley) = Kastri Acheronta = *Pandosia*	20	23, 25, 53, 54, 64, 66(T.1), 74(T.2), 83, 89(T.3), 97(T.4), 107, 160.
Kastri (at Chanopoulo) = Chanopoulo	11	63.
Kastri (at Episkopiko) = Episkopiko	55	
Kastri (Gardiki Filiaton) = Agios Georgios (Gardiki Filiaton) = Gardiki Filiaton = Pyrgos (Gardiki Filiaton) = Pyrgos tou Gardikiou (Filiaton) = Glousta(?)	85	75(T.2), 90(T.3).
Kastri (of Ioannina plateau) = Megalo Gardiki = Gardiki (Ioannina plateau) = *Passaron (?)*[2]	80	**V.** 6, 30, 31, 32, 33, 34, 51, 53, 54, 66(T.1), 71, 75(T.2), 83, 90(T.3), 97(T.4), 101, 140, 141–146, 165–167.
Kastri (of Psina) = Psina	75	57, 59, 60, 90(T.3), 97(T.4).
Kastri (of Vathy) = Vathy = Kokkino	30	57, 60, 90(T.3).
Kastri Acheronta = Kastri (at Acheron valley) = *Pandosia*	20	23, 25, 53, 54, 64, 66(T.1), 74(T.2), 83, 89(T.3), 97(T.4), 107, 160.
Kastri/Kastro Rizovouni = *Batiai* = *Batiae* = Lelovo	21	**IV, V.** 23, 36, 51, 53, 54, 65, 75(T.2), 80, 83, 89(T.3), 92, 96, 97(T.4), 99–101, 107–113, 123, 140, 166.
Kastris (?) = Dhrovjani	119	91(T.3).
Kastriotissa	9	
Kastritsa = *Tekmon = Eurymenai (?)*	77	**IV, V.** 26, 31, 33, 34, 51, 53, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 100, 101, 124–128, 145, 165–166, 168.
Kastritsa (of Agios Minas) = Kastraki of Agios Minas = Revnikio	122	91(T.3), 166.
Kastriza = Akropolis of Koroni	24	
Kastro (of Lia) = Lia = Babouri	101	
Kastro (of Lakhanokastro) = Lakhanokastro = Oraiokastro Pogoniou = Oreokastro	124	75(T.2), 91(T.3), 166.

[2] Traditional identification by S.I. Dakaris

Kastro (Pepeli) = Pepeli	120	61, 91(T.3).
Kastro (at Selo) = Kalaja e Selose = Selo	105	66(T.1), 88, 91(T.3), 97(T.4).
Kastro Kallitheas = Tsourilas	60	
Kastro of Ioannina = *Passaron?*[3]	79	30, 31, 33, 34.
Kastro Pantokrator (fortifications in Preveza)	4	
Kastro Rogoi = Kastro ton Rogon = Kastro Rogous = Rogous = *Bouchetion* = *Boucheta*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Kastro Rogous = Kastro ton Rogon = Kastro Rogoi = Rogous = *Bouchetion* = *Boucheta*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Kastro tis Kiafas = Castle of Souli	28	
Kastro tis Salonikis	58	
Kastro tis Voulgaras = Gourgara = Vourgara = Faskomilia = Nista	44	60, 61, 90(T.3).
Kastro ton Kimmerion = Cape Cheimerion = Kiotezi	17	
Kastro ton Rogon = Kastro Rogoi = Kastro Rogous = Rogous = *Bouchetion* = *Boucheta*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Kastro tou Malakinou = Karteri = Karteriza	41	
Katafiqi = Pirgu	132	61, 91(T.3).
Kato Mousiotitsa = Gephyra Zeta (?)	33	
Kato Zalongo	74	
Këlcyra	142	
Khouliaradhes = Sirouno = Kastelio = Kastelli	53	57, 90(T.3), 97(T.4).
Kioteza = Agora = Liongati	37	**II.** 3, 15, 16, 18, 49, 51, 74(T.2), 90(T.3), 97(T.4), 100, 101, 155–158, 165.
Kiotezi = Cape Cheimerion = Kastro ton Kimmerion	17	
Kiouteti = Kastraki Sideris = Φρύκτορια της Σίδερης	69	58, 60.
Kleisoura (?)	32	
Klimatia = Veltsista	81	82, 83, 90(T.3), 97(T.4).
Klos = *Nikaia*	153	17, 19, 53, 54, 64, 74, 75(T.2), 92(T.3), 95.
Kokkino = Kastri (of Vathy) = Vathy	30	57, 60, 90(T.3).
Kokkinolithari = Litharostrougga = Litharostrougga Keramitsas	86	
Koqino Lithari	118	
Koulia of Bonolati = Κούλια των Μπονολάτων = Pyrgos Koulia	46	

[3] Alternative identification by G. Pliakou.

Κούλια των Μπονολάτων = Koulia of Bonolati = Pyrgos Koulia	46	
Koutsiates = Gardiki (of Kokytos valley) = Logkates = PS24	36	
Koutsi = Polyneri	43	75, 90(T.3), 92, 93, 97(T.4).
Krenai (?) = Palioavli	1	
Ktismata	121	87, 88, 91(T.3).
Labovë = Paleokastra (of Labove)	139	62, 75(T.2), 84, 85, 86, 91(T.3), 95, 97(T.4), 98, 166.
Lakhanokastro = Oraiokastro Pogoniou = Oreokastro = Kastro (of Lakhanokastro)	124	75(T.2), 91(T.3), 166.
Lekël = Lekli = Shën Mëhilli	144	22, 67(T.1), 92(T.3), 166.
Lekli = Lekël = Shën Mëhilli	144	22, 67(T.1), 92(T.3), 166.
Lëkurësi Castle = Likurs	115	
Lelovo = *Batiai* = *Batiae* = Kastri/Kastro Rizovouni	21	**IV, V.** 23, 36, 51, 53, 54, 65, 75(T.2), 80, 83, 89(T.3), 92, 96, 97(T.4), 99–101, 107–113, 123, 140, 166.
Lemiko = Elleniko = Tsamanda = Tsamanta	100	
Lia = Babouri = Kastro (of Lia)	101	
Lidiza = Ripësi = Sinou	106	66(T.1), 91(T.3), 166.
Likurs = Lëkurësi Castle	115	
Limar	143	
Liongati = Agora = Kioteza	37	**II.** 3, 15, 16, 18, 49, 51, 74(T.2), 90(T.3), 97(T.4), 100, 101, 155–158, 165.
Litharostrougga = Kokkinolithari = Litharostrougga Keramitsas	86	
Litharostrougga Keramitsas = Kokkinolithari = Litharostrougga	86	
Logkates = Gardiki (of Kokytos valley) = Koutsiates = PS24	36	
Lygaria = Lygia A-C = *Torone (?)*	66	36, 63, 71, 75(T.2), 83, 84, 86, 90(T.3), 117, 139, 166.
Lygia A-C = Lygaria = *Torone (?)*	66	36, 63, 71, 75(T.2), 83, 84, 86, 90(T.3), 117, 139, 166.
Maiandria = Kara-Ali-Bey = Karalibeu = Neohori	110	43, 91(T.3), 93, 94.
Malahuna = Malathrea	90	55, 56, 57, 66(T.1), 75(T.2), 79, 80, 87, 91(T.3), 97(T.4), 98, 160.
Malathrea = Malahuna	90	55, 56, 57, 66(T.1), 75(T.2), 79, 80, 87, 91(T.3), 97(T.4), 98, 160.

Malçan = Malçani = Maliçan	109	66(T.1), 83, 88, 91(T.3), 97(T.4), 166.
Malçani = Malçan = Maliçan	109	66(T.1), 83, 88, 91(T.3), 97(T.4), 166.
Maliçan = Malçan = Maliçani	109	66(T.1), 83, 88, 91(T.3), 97(T.4), 166.
Mal I Finikut = Mali i Finiqit = Finik = *Phoenice* = *Phoinike*	117	24, 25, 28–30, 43, 53, 54, 57, 74, 75(T.2), 79, 80, 83, 91(T.3), 92–94, 137, 140, 145, 166, 167.
Mali i Finiqit = Mal I Finikut = Finik = *Phoenice* = *Phoinike*	117	24, 25, 28–30, 43, 53, 54, 57, 74, 75(T.2), 79, 80, 83, 91(T.3), 92–94, 137, 140, 145, 166, 167.
Mamakou = Ellenika = Ellenika tou Mamakou	35	90(T.3).
Margariti	39	
Masklinitsa = Mastilitsa	67	64, 90(T.3), 139.
Mastilitsa = Masklinitsa	67	64, 90(T.3), 139.
Matohasanaj = Kalaja e Matohasanaj	146	67(T.1), 75(T.2), 84, 86, 88, 92(T.3).
Mavrovë = Kalaja e Mavrovë = *Olympe (?)*	149	
Megali Gotista = Gradetsi	78	
Megalo Gardiki = Gardiki (Ioannina plateau) = Kastri (of Ioannina plateau) = *Passaron (?)* [4]	80	**V.** 6, 30, 31, 32, 33, 34, 51, 53, 54, 66(T.1), 71, 75(T.2), 83, 90(T.3), 97(T.4), 101, 140, 141–146, 165–167.
Mehala = Kalaja e Mehalat = Mehalles	97	
Mehalles = Mehala = Kalaja e Mehalat	97	
Melan = Melanit Tekke = Teqeja e Melanit = *Omphalion*	125	66(T.1), 91(T.3), 97(T.4).
Melanit Tekke = Melan = Teqeja e Melanit = *Omphalion*	125	66(T.1), 91(T.3), 97(T.4).
Mesogephyra	123	
Mesopotamo = Nekromanteion = Nekyomanteion	18	**IV.** 33, 51, 63, 74(T.2), 89(T.3), 92, 97(T.4), 98, 100, 101, 158–160, 166, 167.
Metoqi	114	57, 91(T.3), 97(T.4), 166.
Moni Sosinou	104	
"Narrow defile" = Χτίσμα τού Φατηριού (?)	87	
Neohori = Kara-Ali-Bey = Karalibeu = *Maiandria*	110	43, 91(T.3), 93, 94.

[4] Traditional identification by S.I. Dakaris

Nekromanteion = Nekyomanteion = Mesopotamo	18	**IV.** 33, 51, 63, 74(T.2), 89(T.3), 92, 97(T.4), 98, 100, 101, 158–160, 166, 167.
Nekyomanteion = Nekromanteion = Mesopotamo	18	**IV.** 33, 51, 63, 74(T.2), 89(T.3), 92, 97(T.4), 98, 100, 101, 158–160, 166, 167.
Nikaia = Klos	153	17, 19, 53, 54, 64, 74, 75(T.2), 92(T.3), 95.
Nikopolis	5	32.
Nista = Gourgara = Vourgara = Kastro tis Voulgaras = Faskomilia	44	60, 61, 90(T.3).
Olpae (?) = Agrilovouni	3	
Olympe (?) = Kalaja e Mavrovë = Mavrovë	149	
Omphalion = Melan = Melanit Tekke = Teqeja e Melanit	125	66(T.1), 91(T.3), 97(T.4).
Onchesmos = Agioi Saranta = Sarandë = Santi Quaranta	116	
Oraiokastro Pogoniou = Oreokastro = Lakhanokastro = Kastro (of Lakhanokastro)	124	75(T.2), 91(T.3), 166.
Oreokastro = Oraiokastro Pogoniou = Lakhanokastro = Kastro (of Lakhanokastro)	124	75(T.2), 91(T.3), 166.
Oricum = *Orikum* = *Orikos* = "Ericho"	150	24, 30, 91(T.3), 92, 167.
Orikos = *Oricum* = *Orikum* = "Ericho"	150	24, 30, 91(T.3), 92, 167.
Orikum = *Orikos* = *Oricum* = "Ericho"	150	24, 30, 91(T.3), 92, 167.
Oropos (?) = Voulista Panagia	31	
Orraon = *Horraon* = *Horreum* = Ammotopos	22	31, 66(T.1), 74(T.2), 83, 90(T.3), 137, 140, 165–167.
Paleochori = Paleochori Botsaris	29	
Paleochori Botsaris = Paleochori	29	
Paleokastra (of Labove) = Labovë	139	62, 75(T.2), 84, 85, 86, 91(T.3), 95, 97(T.4), 98, 166.
Paleokastra = Palokastër	135	
Paleokastro Despotikou = Despotikon = Paliokastro Ai Minas = *Ilium(?)*	84	75(T.2), 90(T.3), 166.
Paleokoula	7	
Paleokula	126	
Paleomanastër = Palio Monastiri	98	71, 72, 91(T.3), 107.
Palioavli = *Krenai (?)*	1	
Paliokastro = Vela = Vella = Vellas	103	
Paliokastro Ai Minas = Despotikon = Paleokastro Despotikou = *Ilium(?)*	84	75(T.2), 90(T.3), 166.
Paliokastro Morfis	40	
Paliokastro of Kerentza (?) = Splantza (?) = "Wall of Mandouga" (?)	16	
Palio Monastiri = Paleomanastër	98	71, 72, 91(T.3), 107.

Paliorophoron = *Elatia* = *Elatria* = *Elatreia* = *Elateia*	13	23, 50, 53, 54, 66(T.1), 74(T.2), 89(T.3), 99, 107, 165.
Paliouri = Dragoumi (of Kalamas valley)	83	
Palokastër = Paleokastra	135	
Pandosia = Kastri Acheronta = Kastri (of Acheron valley)	20	23, 25, 53, 54, 64, 66(T.1), 74(T.2), 83, 89(T.3), 97(T.4), 107, 160.
Panormus (?) = Kalaja e Borshit = Kala e Borshit = Borshi = Kalaja e Sopotit = Sopoti	129	
Paramythia Castle = Aidonat = *Photike*	45	75(T.2), 80, 84, 85, 90(T.3).
Parga	25	
Passaron ? = Kastro of Ioannina[5]	79	30, 31, 33, 34.
Passaron ? = Megalo Gardiki[6] = Gardiki (of Ioannina plateau)= Kastri (of Ioannina plateau)	80	**V.** 6, 30, 31, 32, 33, 34, 51, 53, 54, 66(T.1), 71, 75(T.2), 83, 90(T.3), 97(T.4), 101, 140, 141–146, 165–167.
Pente Ekklesies = Uzdina	70	22, 75(T.2), 90(T.3), 97(T.4).
Pepeli = Kastro (Pepeli)	120	61, 91(T.3).
Përmet = Guri I Qytetit	140	58, 60, 91(T.3).
Perdhika (?) = Dymokastro = Ellinokastro = Elimokastro = Erimokastro = Karavostasi = *Elina*	42	35, 53, 54, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 166.
Phanote = Doliani	62	**IV, V**. 30,31, 32, 35, 38, 51, 66(T.1), 71, 75(T.2), 83, 89, 90(T.3), 97(T.4), 100, 101, 107–109, 122–123, 140.
Phidokastro = *Ambracus* = *Ambrakos*	6	29, 30, 89(T.3), 96(T.4).
Phoenice = Mal I Finikut = Mali i Finiqit = Finik = *Phoinike*	117	24, 25, 28–30, 43, 53, 54, 57, 74, 75(T.2), 79, 80, 83, 91(T.3), 92–94, 137, 140, 145, 166, 167.
Phoinike = Mal I Finikut = Mali i Finiqit = Finik = *Phoenice*	117	24, 25, 28–30, 43, 53, 54, 57, 74, 75(T.2), 79, 80, 83, 91(T.3), 92–94, 137, 140, 145, 166, 167.
Photike = Paramythia Castle = Aidonat	45	75(T.2), 80, 84, 85, 90(T.3).
Phrosini	48	61, 90(T.3).
Phylake (?) = Kalogeritsa = Kaloyeritsa = Therakisi	49	31, 75(T.2), 90(T.3), 165.
Pirgu = Katafiqi	132	61, 91(T.3).

[5] Alternative identification by G. Pliakou

[6] Traditional identification by S.I. Dakaris

Ploçe = *Amantia* = *Abantia*	148	53, 54, 74, 75(T.2), 79, 80, 92(T.3).
Polyneri = Koutsi	43	75, 90(T.3), 92, 93, 97(T.4).
PS24 = Gardiki (of Kokytos valley) = Logkates = Koutsiates	36	
Psina = Kastri (Psina)	75	57, 59, 60, 90(T.3), 97(T.4).
Pyrgos (Gardiki Filiaton) = Agios Georgios (Gardiki Filiaton) = Gardiki Filiaton = Kastri (Gardiki Filiaton) = Pyrgos tou Gardikiou (Filiaton) = Glousta(?)	85	75(T.2), 90(T.3).
Pyrgi = Elephtheri	27	35, 57, 60, 90(T.3).
Pyrgos Koulia = Koulia of Bonolati = Κούλια των Μπονολάτων	46	
Pyrgos Ragiou	65	**IV, V.** 35, 51, 63, 66(T.1), 67, 75(T.2), 83, 90(T.3), 97(T.4), 101, 135–140, 145, 165, 166, 168, 169.
Pyrgos tou Gardikiou (Filiaton) = Agios Georgios (Gardiki Filiaton) = Gardiki Filiaton = Kastri (Gardiki Filiaton) = Pyrgos (Gardiki Filiaton) = Glousta(?)	85	75(T.2), 90(T.3).
Pyrgos tou Venezianou = Skala Zorianou = Skala Zorgianou= Skala Filiaton	61	
Qeparoi = Gradishta (of Karosi) = Karosi = Kasteli	130	61, 91(T.3).
Qyteza = Dishati	88	61, 66(T.1), 67, 91(T.3).
Rabie = Rabije = Gradishta (of Rabie)	154	75(T.2), 92(T.3), 94, 95.
Rabije = Rabie = Gradishta (of Rabie)	154	75(T.2), 92(T.3), 94, 95.
Raveni	72	75(T.2), 82, 83, 90(T.3), 145.
Revnikio = Kastraki of Agios Minas = Kastritsa (of Agios Minas)	122	91(T.3), 166.
Riniassa = Riza	15	
Ripësi = Lidiza = Sinou	106	66(T.1), 91(T.3), 166.
Riza = Riniassa	15	
Rogous = Kastro ton Rogon = Kastro Rogoi = Kastro Rogous = *Bouchetion* = *Boucheta*	12	20, 38, 50, 89(T.3), 96(T.4), 107, 166.
Santi Quaranta = Agioi Saranta = Sarandë = *Onchesmos*	116	
Saraginisht = Saraginishtë = *Antigonea*	137	29, 53, 54, 63, 67(T.1), 75(T.2), 82, 88, 91(T.3), 95, 97(T.4), 97, 98, 106, 165, 166.
Saraginishtë = Saraginisht = *Antigonea*	137	29, 53, 54, 63, 67(T.1), 75(T.2), 82, 88, 91(T.3), 95,

		97(T.4), 97, 98, 106, 165, 166.
Sarandë = Agioi Saranta = Santi Quaranta = *Onchesmos*	116	
Selo = Kalaja e Selose = Kastro (of Selo)	105	66(T.1), 88, 91(T.3), 97(T.4).
Shën Gjini	99	
Shën Mëhilli = Lekël = Lekli	144	22, 67(T.1), 92(T.3), 166.
Sinou = Ripësi = Lidiza	106	66(T.1), 91(T.3), 166.
Sirouno = Khouliaradhes = Kastelio = Kastelli	53	57, 90(T.3), 97(T.4).
Sistrouni, Sistrounion	34	90(T.3).
Skala Filiaton = Skala Zorgianou = Skala Zorianou = Pyrgos tou Venezianou	61	
Skala Zorgianou = Skala Zorianou = Skala Filiaton = Pyrgos tou Venezianou	61	
Skala Zorianou = Skala Zorgianou = Skala Filiaton = Pyrgos tou Venezianou	61	
Skloupo = Ambelochori	52	58, 59, 60, 90(T.3), 97(T.4), 166.
Sopoti = Kalaja e Sopotit = Kalaja e Borshit = Kala e Borshit = Borshi = *Panormus (?)*	129	
Splantza (?) = Paliokastro of Kerentza (?) = “Wall of Mandouga” (?)	16	
Tekmon = Kastritsa = *Eurymenai (?)*	77	**IV, V.** 26, 31, 33, 34, 51, 53, 66(T.1), 75(T.2), 90(T.3), 97(T.4), 100, 101, 124–128, 145, 165–166, 168.
Tepelene	145	
Teqeja e Melanit = Melan = Melanit Tekke = *Omphalion*	125	66(T.1), 91(T.3), 97(T.4).
Therakisi = Kalogeritsa = Kaloyeritsa = *Phylake (?)*	49	31, 75(T.2), 90(T.3), 165.
Torone (?) = Lygaria = Lygia A-C	66	36, 63, 71, 75(T.2), 83, 84, 86, 90(T.3), 117, 139, 166.
Triangular Fortress	92	
Trikastron	23	82–83, 90(T.3).
Tsamanda = Tsamanta = Lemiko = Elleniko	100	
Tsamanta = Tsamanda = Lemiko = Elleniko	100	
Tsouka	54	58, 59, 60, 90(T.3), 166.
Tsourilas = Kastro Kallitheas	60	
Uzdina = Pente Ekklesies	70	22, 75(T.2), 90(T.3), 97(T.4).
Vagalat = Bogazi = Vagalati	91	60, 66(T.1), 91(T.3), 97(T.4).
Vagalati = Bogazi = Vagalat	91	60, 66(T.1), 91(T.3), 97(T.4).
Vathy = Kastri (of Vathy) = Kokkino	30	57, 60, 90(T.3).
Vela = Vella = Vellas = Paliokastro	103	

Veliani = Chrysavgi = *Elea*	47	**III, IV, V**. 3, 16, 17, 18, 31, 32, 35, 44, 49, 50, 51, 53, 54, 66(T.1), 75(T.2), 89, 90(T.3), 92, 96, 97(T.4), 98, 101, 113–121, 123, 158, 165, 166–168.
Vella = Vela = Vellas = Paliokastro	103	
Vellas = Vela = Vella = Paliokastro	103	
Veltsista = Klimatia	81	82, 83, 90(T.3), 97(T.4).
Vereniki	57	
Vigla Keramitsas	71	57, 60.
Voulista Panagia = *Oropos (?)*	31	
Vourgara = Gourgara = Kastro tis Voulgaras = Faskomilia = Nista	44	60, 61, 90(T.3).
Vrousina	73	
Vrysoula (fortifications in Preveza)	4	
"Wall of Mandouga"(?) = Paliokastro of Kerentza (?) = Splantza (?)	16	
Xylokastro = *Ephyra* = *Cichyrus*	19	
Zagoriani = Chrysorrachi = Akropoli Kastri Chrisorrachis = *Helikranon*	102	84, 91(T.3), 97(T.4).
Zalongo = Kamarina = *Kassope*	14	**IV, V.** 26, 32, 51, 53, 54, 65, 66(T.1), 74(T.2), 89(T.3), 92, 96(T.4), 98, 101, 102–107, 112, 123, 165, 166, 168.
Zervochori = Agios Donatos (at Kalamas valley) = Agios Donatos Zervochoriou	38	**I, II, V**. 3, 4, 14–18, 39, 44, 49–51, 75(T.2), 89, 90(T.3), 97(T.4), 100, 101, 150–154, 158, 165, 166.
Zhulati	133	
Zëmnec (?) = Zimnec	107	
Zimnec = Zëmnec (?)	107	
Χτίσμα τού Φατηριού (?) = "Narrow defile"	87	
Φρύκτορια της Σίδερης = Kastraki Sideris = Kiouteti	69	58, 60.

APPENDIX II:

LIST OF FORTIFIED SITES IN EPIRUS

This is a list of the 154 fortified sites of Epirus that have been studied or visited by the author. Note, however, that this is by no means a complete list of the fortifications in the region, as Hammond (1967) alone described well over 150 sites with varying accuracy all around Epirus, while M.-P. Dausse (2004, 2011a, 2011b and 2017) identified 53 or 56 fortified sites in Molossia alone.[1] Of these, 27 could be found via other sources and are thus included here. Sites were left out when they were proven impossible to locate, either due to the vague description of the site and/or due to the brush or forest cover in the satellite image.

Upon compiling this appendix in the early part of 2019 the author discovered a brand new web site, *Beyond the Borders. The History and Archaeology of Northern Greece,* which was designed to host an interactive map of the ancient sites across the entirety of northern Greece and southern Albania.[2] In this work, none of the data from that site has been utilized, even though Epirus was the first area covered by the project. Looking through their site, it would appear that at least some sites –those known by the name of the village within the territory of which the site is located – have their reference point set to the center of the modern village in question. Therefore, the localizations reported here are more accurate.

The sites are listed in geographical order, running in zigzag from the southeast to northwest. As the area is vast, some 200 km south –southeast to north– northwest with a width of some 60–80 km, it was divided into nine sheets numbered in running order, starting from the southeastern corner and running in a zigzag, *boustrophedon* pattern, northwards. The site numbering

[1] Dausse 2004, Table 1, lists 58 Molossian sites in total, 56 were visited by Dausse and 53 of those had fortifications; On the other hand, Dausse 2007, Table 2 lists a total number of 60 sites, among which are four unfortified settlements.
[2] Beyond the Borders: The history and archaeology of Northern Greece. http://borders.classics.ox.ac.uk/MapBox.html. [Accessed 18.6. 2019.]

starts from the southeastern corner running westwards. Upon reaching the coast, it turns eastward until reaching the eastern limit, after which it runs westward again on a slightly higher level. The map index sheet is Figure 1, followed by detailed map sheets 1 -9, Figures 2 -10. The first digit in the listing is the **site number**, and the second is the **map sheet** on which the site can be found (i.e., **15/2**). In case a site is visible in several sheets, all of the sheets are indicated (i.e., **6/1, 6/2**).

Column headers:

1) Name

The name of site and its various aliases. In general, Hammond used the old, pre-1944 Albanian or Vlach names of many sites, settlements, and other geographical features, as they were known during his travels in the 1930s. Since then, many have been renamed. Mouselimis also occasionally uses the older names of sites, spelled differently than in today's maps. Different sources might use slightly differing versions of the name of a site; all known versions are listed. In some cases, the ancient name of the site is known; the ancient name(s and aliases) are in *italics*.

2) Type

Type of the fortified site; slightly revised after Fachard 2016, 232.

CW= "City Walls": Fortified settlement. Civic enceinte protecting a settlement, the sizes of which can vary from a small village surrounded by walls to great city walls, such as Ambrakia, which has an enceinte of ca. 6 km covering some 120 hectares.

F= Fort/Fortress. A military installation, usually of limited size meant to house a garrison. A *phrourion*. Some could also be regarded as safe resting places for shepherds and their flocks during a migration, or refuges for the population living in unfortified villages in the vicinity.

T= Tower (Watchtower/fortified tower settlement, farmstead). A small fortified tower. Could be either a military installation, a *phryktorion* housing a few guards on a lookout, or possible relay duty (fire signals). Alternatively, a privately owned and built fortified tower residence or farm tower.

R= Rubble Enceinte. A refuge (?) of indeterminable date built of dry rubble (i.e., natural, unshaped small rocks). In many cases these are elliptical in shape without clear entrances or other features such as towers; as such, they could date anytime from prehistoric to Medieval–modern.

L= Long Walls. Long linear walls. For example, walls connecting a civic enceinte to its port, cf. Athens and its Long Walls leading to Peiraeus. Linear walls could also be built across a peninsula to block the entry from the mainland or block the use of a mountain pass.

3) Period

The most likely period to which the fortification belongs is indicated as follows:

P = Prehistoric (Bronze/Iron Age). Anything pre-700 BC. Only very few sites have such dates.

A = "Ancient". No clear indication of a closer date; anything between Archaic–Hellenistic, ca. 700–200 BC.

AR = Archaic, 700–480 BC. Only a few examples are known in Epirus.

CH = Classical–Hellenistic (Early 5th century–mid 2nd century BC).

H = Hellenistic (mid–4th –mid–2nd century BC. The peak of urbanization in the area, ending with the Roman conquest in 167 BC.)

RB = Roman/Byzantine (from the Roman conquest to the end of Byzantine rule in the area, i.e., mid–2nd century BC– 14th century AD.)

MM = Mediaeval/Modern (post AD 1300, Venetian and Ottoman periods).

4) Source

References; where the description of a site was obtained. Note that these do not cover every possible source, only the most important or those the author has come across.

5) Info

Architectural features of the site if available/known; circumference of the enceinte, area. Curtain thickness, presence of compartment walls within if any, whether there are jogs in the walls. Number of towers if any, presence of cross-walls within towers if known, measurements if known. Number of gates/posterns, their measurements if known. Style of masonry if known, special features; drafting of corners, vertical grooves, drains, etc.

Note that Hammond (1967) frequently recorded different measurements in *paces*, referring to his field notes. The pace measurements are unclear. One English pace is equal to roughly one yard, ca. 0.9 m, while an American pace roughly equals 0.75 m. Thus, for instance in his description of Kastritsa/ Tekmon/ Eurymenae (number 77), the measurements are peculiar. The southwestern tower on the summit, ca. 9 m wide by 11.6–11.9 m deep, would, according to Hammond, have been 19 paces wide with a projection of 16 paces. If a pace is assumed to be ca. 0.75 m, the width would be 14.25 and the projection 12 m; with the English measurement equating a pace to one yard, the dimensions would be huge, ca. 17.29 by 14.56 m. In some cases, the later research has adopted the measurement where a pace equals one meter. In cases where the measurements have been given in paces, it has been written in **quotations, (i.e. "1200 paces", etc.).**

In cases where the information between sources differs, the sources have been indicated. As there is only limited room for information on each site, the text has been abbreviated as much as possible (i.e. using only digits instead of writing the number of different features and so on). While this might be difficult to read at times, it has been necessary to list as much information as possible. The same goes with regard to dating, if known, and abbreviated in the following ways (depending on how it was indicated in the source):

a) Beginning/latter part of a century: First half I, second half II, followed by a slash and the century in question in Roman numerals (i.e. **I/IV BC** indicating **the first half of the 4th century, 400–350 BC)**.

b) First/second/third/fourth quarter of a century: A first, B second, C third, and D fourth quarter, followed by slash and the century in Roman numerals (i.e. **C/IV BC, indicating 350–325 BC).**

6) Visited? Coordinates

Y = Yes, the author has personally visited the site, year(s) when. In case of several visits over many years, a time span (i.e., **Y, 2004–2009**).

N= No.

NF = Never Found; not visited, the site might not even visible in the satellite images or maps. Description of the site fits in a geographic feature, but nothing certain can be said. If all clues point to a certain location even though nothing can be seen, the location has the note **"Assumed at"**.

In the case of some Albanian sites, the 2012 survey publication of Enrico Giorgi and Julian Bogdani provided UTM coordinates for the sites, though lacking the notion of the UTM zone or latitude band. In these cases their coordinates have a notation **"G & B 2012"**.

Coordinates (UTM) obtained from Google Earth. One point taken per site, even across large sites. The coordinates consist of **UTM zone (34), latitude band (S or T), Easting, Northing**; for example **34 S 454120.00 E, 4375565.00 N.** In addition, the approximate elevation of a site is indicated, either obtained from Google Earth or from the literary sources. The elevation is indicated by meters above sea level (i.e., "**Z: 300 m a.s.l.**"). At large sites, the height range within the site is indicated (i.e., "**Z: 290–340 m a.s.l.**"). Note, however, that obtaining the altitude data from the satellite data can lead to erroneous values, so they should be considered merely as **rough estimates**.

SITE / MAP SHEET	NAME, ALIASES	TYPE	PERIOD	SOURCE	INFO	VISITED? UTM COORDINATES
1/1	**Palioavli, *Krenai?***	F?	A?	Hammond 1967, 240.	2 circuits on the summit of the hill. Flattened summit, ca. 200 x 50 m. Inner circuit built of "large blocks without mortar". 1 tower in S. Outer enceinte circular, diameter ca. 500 m. Outer wall thicker, built of "rough masonry". No further information.	NF. Assumed at 34 S 514266.00 E 4307062.00 N Z: 80 m a.s.l.
2/1	**Argos Amphilochicum**	CW	CH	Hammond 1967, 239, 660; Ley 2009a, 57-61, maps 2, 4, 29; Ley 2009b, 33-39, maps 4a, 4b, figs. 24-32; Satellite image.	Ley's location is different.[3] Preserved circumference 1.5 km. Curtains 2.8 m thick, compartmented at 3 m intervals. 1 compartmented curtain, the other abbreviated? 10 quadrangular towers, w. 7.5–8.1 m, projecting 3.2–5.15 m at intervals of 29–43 m. Bastion 10 especially large, 8 m wide, projecting 19 m. 1 gate, w. 2.4 m, 1 postern, w. 1.4 m. Masonry large ashlar. Wooden dovetail clamps noted. No drafting. Ley 2009 dated to C/V BC.	N. 34 S 516519.00 E 4309098.00 N Z: 28–78 m a.s.l.
3/1	**Agrilovouni, *Olpae*?**	F	A?	Hammond 1967, 240-241; Mentioned in Ley 2009a, 323.	Remains of a demolished enceinte on the summit of Agrilovouni ridge. Circumference "300-400 paces". Very vague description of the fortifications. Site guarded the harbor of Argos Amphilochikon, according to Ley 2009a, 323.	NF. Assumed at 34 S 512483.00 E 4311317.00 N Z: 70–80 m a.s.l.
4/1 4/2	**Castles in Preveza; Kastro Pantkrator,**	F	MM	Smiris 2002, 123-128, figs. 98-101;	4 castles in and around Preveza, all dating from the 18th and 19th centuries AD and located close to each other: The Kastro	N. 34 S

[3] Ley visited the site, took measurements and photos, but still placed it N of modern Loutro, where nothing is visible. However, in the location listed here, S of Loutro, there were walls visible in a satellite image. According to Polybios and Thukydides, Olpae lies at a distance of 25 stadia (4.6 km) and Ambrakia 180 stadia (33.1 km) from Argos: this location is 4.6 km from Olpae and 31 km from Arta, cf. Ley's location at 4.6/28.5.

	Agios Andreas, Agios Georgios & Vrysoula			Kastrologos: Castles of Greece	Pantkrator in the SW, the Castle of Agios Andreas in S, Agios Georgios in the middle plus Vrysoula, part of the moat of Preveza to the N. Point taken from within Ft. Agios Georgios.	478602.00 E 4312400.00 N Z: 3 m a.s.l.
5/1 **5/2**	**Nikopolis**	CW	RB	Hammond 1967, 62; Zachos 2015, 87-94, 164-173.	2 phases: **I)** Roman city, circumference ca. 5 km, 1500 ha. Walls 2.6 m thick, concrete core faced with fired bricks. 5 gates, 2 posterns. Twin horseshoe-shaped towers located only at gates. Founded after 31 BC. **II)** Byzantine city in NE part, circumference 2074 m, 27.4 ha. Walls with a concrete core, faced with stones and brick bands. Still 12 m high. 3 gates, 3 posterns. 38 towers of polygonal, triangular, horseshoe and rectangular shape. Fortified after AD 474.	Y, 2004-2014. 34 S 476749.00 E 4317965.00 N Z: 1–30 m a.s.l.
6/1 **6/2**	**Phidokastro, *Ambracus***	F / CW	A +RB	Hammond 1967, 137-138, 660; Dakaris 1971, 43; Satellie image.	Site located in the middle of a salt marsh. Byzantine fortifications on top of ancient blocks. Trapezoidal in shape, circumference 1.2 km, 8–9 ha. 2 openings in the circuit, towards the S and W. In N tip a reverse square tower. Ancient masonry well cut “large rectangular” blocks (= ashlar?), no drafting. Fortified port of Ambrakia located on the ancient seashore.	N. 34 S 495945.00 E 4321326.00 N Z: 0 m a.s.l.
7/1	**Paleokoula**	F	CH?	Hammond 1967, 150, map 10.	Squarish enceinte, ca. 170 m in circumference. 4 towers, one 3.3 m wide, projecting 5.2m, another 8.7 m square, reverse(?) Masonry large “rectangular, well cut, laid in courses” (=ashlar?). Outer circuit around the first, circumference 1 km, badly preserved. Hammond reports abundance of black-glaze sherds on the surface.	NF. Assumed at 34 S 511188.00 E 4321757.00 N Z: 345 m a.s.l.
8/1	**Embesos**	F?	CH + RB/MM?	Hammond 1967, 244; Satellite image.	SE of the village of Embesos. Circumference “1200 paces”, wall 2.1 m thick. No towers or jogs. Massive to medium sized “rectangular” masonry, some polygonal. A crosswall running N-S divides the enceinte to 2 wards.	NF. Assumed at 34 S 527703.00 E 4318891.00 N

					On the summit, within the ancient enceinte there is a small triangular fort built of mortared rubble, with round towers in corners. The triangular fort is visible in the satellite image.	Z: 470 m a.s.l.
9/1	**Kastriotissa**	F	CH +MM	Hammond 1967, 149-150, map 10.	Long and narrow site in NW-SE, 550 m in circumference. Weakest sides in S & N. 2 *reverse* towers on the N side. In S are 2 parallel walls within 20 m of each other, gates in both. Masonry of rough sandstone blocks, large and small with little traces of shaping. Medieval repairs.	NF. Assumed at 510340.00 E 4325994.00 N Z: 217 m a.s.l.
10/1 10/2	**Arta, *Ambrakia***	CW	AR-MM	Hammond 1967, 140-149, 659, map 6; Andreou 1993, 91-93, figs. 2-3, 9; Yiouni 2008a, 50-52; Yiouni 2008b, 81-84, fig. 47; Yiouni 2004, 50-52; Frederiksen 2011, 128-129.	In the bend of ther Arachthos. Protected by the river on the E, N & W sides, in S by Mt. Perranthes. Enceinte circumference ca. 6 km. Traces of city walls found intermittently within the modern city. **I)** Original enceinte in E built on and around Mt. Perranthes. In NE a part of the original city wall is visible beneath the Byzantine Castle of Arta. A stretch of curtain wall and a semicircular tower with one bisecting crosswall and a diameter of ca. 6–7 m reported close by, in N sector in 2003.[4] Compartmented curtains 3–5.6 m thick, built with a stone foundation 1.7–2.4 m high and topped by mudbrick superstructure. White limestone ashlar blocks with tooled face quarried from Mt. Perranthes. City founded during the late VII BC, Frederiksen 2011 dates the eastern portion of the circuit to late VI–early V BC. **II)** Extension of the city, Pyrrheum, towards W on the flat valley floor. When building the ring road of Arta, near the river in W stretches of curtain with a jog and a walled-up postern, w. 1.8 m were excavated in 2002.	Y, 2007–2014. 34 S 498976.00 E 4334244.00 N Z: 20–110 m a.s.l.

[4] Cf. towers P2 and P4 of Lygia A (66) mentioned in Spanodimos 2019, 255, note 30.

					Walls in W were dated by Andreou 1993 to IV BC, the 2002 find of a jog in W wall showed evidence of its use during the Classical and Hellenistic periods. The semicircular tower in N was dated to the early IV BC, being added to an earlier wall. Only 3 other towers have ever been reported in Ambrakia. The capital of Pyrrhus, the most important and largest city in Epirus and an important trade hub. Harbor in Ambracus/Phidokastro (6).	
11/1 **11/2** **11/3**	**Chanopoulo, Kastri**	F	H	Karatzeni 1998, 502-503; Marked as an "ancient site" in map in Aggeli 2005, 15.	Located on a hillock above the spa of Chanopoulo. N wall ca. 40 m long cleared of vegetation in 1998, 4 test pits dug in the NW corner of the site. Excavation yielded Hellenistic pottery and lumps of unbaked clay: Superstructure built of sundried mudbrick. Masonry of plinth unknown. Interpreted as a Hellenistic *phrourion,* a border fort of Ambrakia.	NF. Assumed at 34 S 495029.00 E 4338766.00 N Z: 46–55 m a.s.l.
12/1 **12/2**	**Kastro Rogoi, Kastro ton Rogon,** **Kastro Rogous,** **Rogous,** ***Bouchetion,*** ***Boucheta***	CW	AR? CH-MM, RB	Hammond 1967, 57-61, 660, plan 4; Dakaris 1971, 42, 179-182, fig. 47; Frederiksen 2011, 133-134.	On a hill skirted in N by river Louros. Total circumference 1.3 km, 3 ancient phases plus a Medieval fort on summit. **I)** Walls around the hill top, circumference 550 m, 1.5 ha. 8 towers projecting only 1.5–2 m, indented trace in W. Gate in NW. Masonry isodomic ashlar/trapezoidal, quarry faced, hard grey limestone. Dated to II/V BC. **II)** 2 ha extension to the W. Now 800 m, 3.4 ha. 8 new towers projecting 2.5–4.5 m. Gate in W. Polygonal masonry, drafted corners. Dated to II/IV BC. **III)** New extension in N, circumference now 1.3 km, 8 ha. 5–6 large additional towers projecting 5–5.5 m at 40–60 m intervals. Gate in N. Polygonal masonry, drafted corners. Dated to 343/2–167 BC. Frederiksen 2011 lists the date of phase I as uncertain, possibly VI–V BC: Large amounts of VI BC pottery found on site.	Y, 2006–2013. 34 S 486770.00 E 4334154.00 N Z: 10–28 m a.s.l.

13/1 **13/2**	**Paliorophoron,** ***Elatria,*** ***Elatreia,*** ***Elateia,*** ***Elatia***	CW	A	Hammond 1967, 52-53, 660, plan I, pl. II,b, II,c; Dakaris 1971, 43, 171-175, figs. 43-44.	Hammond 1967: Circumference 2.1 km, curtains 2.3 m thick in E. Masonry large polygonal in E, in N large polygonal and "rectangular". Dakaris 1971, two phases: **I)** Original circumference 1690 m, 12.7 ha. Curtains 2.2 m thick, irregular jogs. 5 rectangular towers in S, 1 in W. In SE, a gate 2.7 m wide enfiladed by 2 towers, in SW a postern, w. 1.3 m. Masonry well cut polygonal, "rather flat-faced". Dated to the end of V BC–343/2 BC. **II)** Repairs, size remained the same. Compartmented curtains in S, 3.2 m thick, built of smaller polygonal blocks with quarry face. Rectangular towers projecting 4.5-5.0 m. Dovetail clamp cuttings! Dakaris interpreted these walls as Hellenistic repairs after capture by Philip II in 343/2.	NF. Assumed at 34 S 475895.00 E 4335407.00 N Z: 60–90 m a.s.l.
14/1 **14/2**	**Kamarina, Zalongo,** ***Kassope***	CW	CH	Hammond 1967, 53-54, 659: Dakaris 1971, 45, 75, 115, figs. 39-40; Hoepfner & Schwander 1986, 85, figs. 65-67; Suha 2019a, 8-9, 16-18, figs. 7-8, 17-18; Suha 2019b, 94, figs. 15, 22.	2 phases, according to Dakaris 1971: **I)** Circumference 2630 m, 29.9 ha. Built on a plateau with cliffs in S, walls in E, SW & W. Curtain walls 3–3.5 m thick, compartmented at intervals of 2.4–2.8 m. The curtain still stands 6 m high in SW sector. There, in places, the walls have conspicuously flat tops which once held the wall-walk slabs and/or parapet blocks now disappeared. Corbelled drain in the bottom of the same curtain. 4 jogs, no towers. 3 gates, E, S & W. Frontal W gate preserved. Width 2.9 m, once covered by a **true arch**, one of the earliest anywhere. 92 m S, a northwards-opening roundhead-corbelled tunnel-like postern, w. 1.3 m. The roof of the tunnel also has a few voussoirs. Very fine quarry-	Y, 2004–2014. 34 S 471945.00 E 4332941.00 N Z: 520–570 m a.s.l.

					faced polygonal masonry, drafted corners. Dated to the 380–340s BC.[5] **II)** Circumference 3010 m, 40 ha. Extension in the lower slopes in SE. Curtains 3.8 m thick, jogs and 2 towers. Gate in SE. Also a crosswall across a valley to the SW. Hellenistic, III/II BC.	
15/2	**Riniassa / Riza**	F	RB-MM	Hammond 1967, 50; Smiris 2002, 129; Kastrologos: Castles of Greece; Satellite image	Venetian fortress on a narrow ridge adjacent to the modern highway, visible from the road and in the satellite images. Long and narrow in plan, divided into 4 wards. Identified with 14th century Byzantine fort of Thomokastro, present ruins considered Venetian.	N. 34 S 464743.00 E 4331654.00 N Z: 89–100 m a.s.l.
16/2 **16/3**	**Splantza?** **Paliokastro of Kerentza?** **"Wall of Mandouga?"**	F? T?	P? A?	Hammond 1967, 63-64; Mouselimis 2001, 57; Dakaris 1971, 45, 62-63, 75; Angeli *et al.* 2015, 18- 19, 42.	Differing accounts, might not even describe the same site. Hammond 1967: "Medium-sized polygonal blocks…inner fort of rectangular blocks" Mouselimis 2001: A wall, possibly a watch-post guarding entry to Fanari Bay (Ammoudia). Height 1 m, 100m long. Dakaris 1971: Walled site, circumference 350–400 m, 1–1.1 ha. Angeli *et al*. 2015: 2 parallel "cyclopean" walls at the E foot of the hill, 170 m long, 2 m thick, up to 1.5 m high. Not dated yet.	NF. Assumed at 34 S 454760.00 E 4342872.00 N Z: 10–60 m a.s.l.
17/2 **17/3**	**Cape Cheimerion, Kastro ton Kimmerion, Kiotezi**	F	CH	Hammond 1967, 64; Dakaris 1972, 96, 134; Mouselimis 2001, 56-57.	On a location known as Stigkia, on S peak of the Glossa peninsula, the site is called Kiotezi. "Bow-shaped" enclosure, 240 m x 32–54 m, circumference 530 m. Curtain wall 290 m long along the SE, E & NE sides. Gate in NE, traces of a tower protecting it. Polygonal masonry. Overgrown, nothing visible.	NF. Assumed at 34 S 454710.00 E 4344107.00 N Z: 140 m a.s.l.

[5] Between 380–355 BC according to Rathke 2001, 88–89. Before the mid–4th century BC by Dornisch 1992, 43; Ca. 340 BC by Suha 2019b, 104.

18/2 **18/3**	**Nekyomanteion, Nekromanteion, Mesopotamo**	F	H	Hammond 1967, 64-65, plan 5, pl. IV,c; Dakaris 1972, figs. 40-41; Baatz 1999, 151-155; Angeli *et al.* 2015, 20-33.	Massive central tower, 21.3 x 21.65 m with walls 3.3 m thick and 3.3 m high. Around it, much less substantial outer enclosure, 62.4 x 46.3 m. Mudbrick superstructure with at least two upper floors. Original entrance in S, later refined in 2 phases into labyrinthine form. Doors covered with **3 true arches**. Below the central room a vaulted cistern/cellar, 15 x 4.3 m, 15 narrow arches. Excavation of the site yielded remains of 7 catapults. Fine polygonal masonry, quarry face and broached work, drafted margins. Baatz dated the central tower to the D/IV–A/III BC., later phases to the A/III–D/III BC. Destroyed by fire in 167 BC. Either a *Turmgehöft,* a fortified noble's manor or a fort controlling the access to former Acherousian Lake to the E of site.	Y, 2004-2014. 34 S 459798.00 E 4343094.00 N Z: 30 m a.s.l.
19/2 **19/3**	**Xylokastro,** ***Ephyra,*** ***Cichyrus***	CW	P + H	Hammond 1967, 65; Dakaris 1972, 63-64, 95, figs. 39-40; Angeli *et al.* 2015, 48-50.	3 concentric wall circuits. Outer enceinte SE of the summit, 1.1 km in circumference, 4 ha. Gate at the S tip, 2.3 m wide, enfiladed by wall projection on its E side. Middle circuit is a retaining wall of the tumuli inside. Masonry in both cyclopean. Innermost enceinte around the S side of the summit, polygonal masonry. Outer and middle circuits dated as Late Helladic (1450–1150 BC), the inner enceinte Hellenistic.	N. 34 S 459593.00 E 4343628.00 N Z: 40–83 m a.s.l.
20/2 **20/3**	**Kastri Acheronta,** **Kastri,** ***Pandosia***	CW	CH + MM+ RB	Hammond 1967, 67-68, plan 6; Dakaris 1971, 43, 81, 167-168, figs. 41-42.	Dakaris 1971: Two ancient phases plus a Medieval fort on the summit. **I)** Circumference 1650 m, 13 ha. Compartmented curtains in S and W, 3.2 m thick. A *diateichisma* running S-N divides the settlement into lower half (7.5 ha) and upper half (5.6 ha). 24 rectangular towers with **internal crosswalls,** 2+2 compartments. Gates in NE, w. 4 m, and SE, w. 2.7 m. S gate, size unknown and W gate 3 m wide. Quarry-faced polygonal and trapezoidal	Y, 2005–2015. 34 S 463323.00 E 4344802.00 N Z: 20–85 m a.s.l.

					masonry, drafted corners. Mudbrick superstructure? Dakaris dated to the end of V BC–343/2 BC. **II)** Lower walls in E & N, circumference 2320 m, total area 33 ha. Curtains 3.5 m thick, 9 towers, larger than in the previous phase. Gate in N. No further description. Dated to 343/2–167 BC.	
21/1 **21/2** **21/3**	**Kastro Rizovouni,** **Kastri Rizovouni,** **Lelovo,** ***Batiae,*** ***Batiai***	CW	H	Hammond 1967, 55-56, 659, plan 3; Dakaris 1971, 79,185-187, figs. 45-46; Suha 2019a, 9-15, figs. 9-14; Suha 2019b, 95-98, figs. 16-19, 23.	Circumference ca. 1.4 km, 10 ha. Curtain walls 3.3 m thick, 3 jogs. In N-NE 6 towers, w. 6.4–7.7, d. 6.5–10.7 m, reciprocal distances 31.7–52.4 m. In SE, 1 small tower ca. 5.1 m square. In the S tip a large battery, w. 11, d.14 m, with large protruding paving slabs visible in the E side wall. **Internal crosswalls within towers**; 4+2 compartments in large towers and the battery, small 2+2. In SW, NW & N, 3 gates, w. 1.5–2.6 m, the last 2 with corbel arches. In NE 3 posterns, w. 1.3 m, 2 with intact roundhead corbels, 1 postern in S. Masonry quarry-faced polygonal & trapezoidal. Drains, drafted corners, vertical grooves. Dovetail clamp hole in a tower corner in N. Niche in the curtain external facing adjacent to the S postern. Dated to the 340s–330s BC.	Y, 2006–2015. 34 S 484669.00 E 4342231.00 N Z: 107–158 m a.s.l.
22/1 **22/2** **22/3**	**Ammotopos,** ***Orraon,*** ***Horraon,*** ***Horreum***	CW	CH	Hammond 1967, 154-155, plan 23, pl. IX,a; Angeli 2005, 19-25.	Circumference 1.1 km, area 5.5 ha. Cliffs in S, compartmented curtains on all other sides. Separately walled acropolis in SE corner. 2 phases: **I)** Original enceinte, curtains 2–2.2 m thick. 11 jogs, no towers. Main gate in W, 3 posterns in other walls. Ashlar masonry, quarry face. Dated by Angeli 2005 to I/IV BC. **II)** Modifications to the fortifications: **New outer facing added into curtains**, now 2.7–3.6 m thick. 8 rectangular **towers with internal cross-walls**. Masonry similar as before. Large cistern and	Y, 2007–2010. 34 S 493599.00 E 4346905.00 N Z: 320–350 m a.s.l.

					town houses impressive, built of ashlar blocks resembling the ones used in the fortifications. Dated to II/IV–I/III BC. Fortifications deliberately demolished (167 BC).	
23/2 23/3	**Trikastron**	CW	CH	Hammond 1967, 161-163, 660, pl. IX,b; Dakaris 1971, 75, 81.	Circumference 1050 m, 6 ha. Settlement partly outside the walls. Located on the summit of a ridge. N side protected by cliffs, walls on other sides. Along the S wall are 3 rectangular towers, w. 8 m, projecting 6 m, with **internal crosswalls** (4+2 compartments). Masonry quarry-faced ashlar and polygonal. Dakaris 1971: Walled in the IV–III BC.	Y, 2013. 34 S 471675.00 E 4349033.00 N Z: 360–514 m a.s.l.
24/2 24/3	**Kastriza, Akropolis of Koroni**	F?	CH? P?	Dakaris 1972, 100; Mouselimis 2001, 26; Angeli *et al.* 2015, 17.	2 km NW of Koroni, left of the road to Margariti. Circumference 0.6 km, rectangular, 0.2 x 0.1 km, 2 ha. 2 gates, E & W. No towers, 1 jog 40 m E of E gate. Polygonal masonry. Dating disputed. Dakaris 1972 dated to the V BC, but Angeli *et al.* 2015 as Late Helladic (1450–1150 BC).	NF. Assumed at 34 S 460260.00 E 4349179.00 N Z: 30–40 m a.s.l.
25/2 25/3	**Parga**	F	MM (+CH?)	Hammond 1967, 77; Dakaris 1972, 135-136; Mouselimis 2001, 159; Smiris 2002, 130-131, figs. 106-107.	Castle of Parga. Originally built by Venetians in 1401, was modified several times until the early 19th century. According to Dakaris 1972, beneath the castle in the W side there is a wall built of polygonal masonry. No further information.	Y, 2004–2008. 34 S 448050.00 E 4348344.00 N Z: 35 m a.s.l.
26/3	**Anthousa**	F	MM	Visit in 2008; Kastrologos: Castles of Greece.	Fort high above Parga, N of the town. Pentagonal in shape, square inner keep in E corner. 2 rectangular towers in W, flank the gate in between. Built by Ali Pasha in 1814.	Y, 2008. 34 S 445500.00 E 4350096.00 N Z: 375 m a.s.l.
27/3	**Elephtheri, Pyrgi**	T	CH?	Dakaris 1972, 142; Riginos 1998, 538; Satellite image.	E of Eleftheri village on the location known as "Pyrgi" in the southern tip of the hill, to the right of the main road. Rectangular tower, 15 x 10 m, walls still 1.5–1.8 m high. Surrounded by an enclosure, remains of which found in S. Enclosure wall 17 m long,	N. 34 S 452044.00 E 4351998.00 N

					0.6 m thick, 0.7 m high. Tower built of polygonal masonry, masonry of the enclosure rectangular (ashlar?), large blocks.	Z: 158 m a.s.l.
28/3	**Castle of Souli, Kastro tis Kiafas**	F	MM	Mouselimis 2001, 155-157; Satellite image.	Size 120x50 m, long axis SE–NW. Large polygonal towers in N and SE corners, 1 small round and 1 rectangular tower on both long sides, SW & NE. Gate in SE. Built by Ali Pasha to control the Souli during the early 19th century.	N. 34 S 469960.00 E 4354197.00 N Z: 685–690 m a.s.l.
29/3	**Paleochori Botsari, Paleochori**	F	CH?	Hammond 1967, 164-165, 660; Dakaris 1971, 81.	SW of the Paleochori village, on a high spur. Circumference 500 m, 1.5 ha. Walls 3 m thick. "Traces of transverse N-S wall bisecting the site"? S side protected by a tower 6.4 m square, W angle protected by reverse tower measuring "7 by 6 paces". Masonry well cut ashlar/trapezoidal.	NF. Assumed at 34 S 473583.00 E 4353241.00 N Z: 945 m a.s.l.
30/3	**Vathy, Kokkino, Kastri**	T	CH?	Zachos & Choinas 2000, 588.	Above the village of Vathy, on a hill called Kokkino or Kastri. Remains of an enceinte, circumference ca. 70 m, surrounding a tower 5 m square. Masonry isodomic ashlar. Good visibility to Voulista Panagia (31) and Kleisoura (23) in N, as well as to Agios Giorgios/Paliokklisi in S.[6] A *phryktorion*.	NF. Assumed at 34 S 491192.00 E 4350654.00 N Z: 393 m a.s.l.
31/3	**Voulista Panagia, *Oropos?***	F	A?	Hammond 1967, 157; Dakaris 1971, 80.	Circumference 450–550 m, 2 ha. Hammond 1967: Masonry large rectangular and trapezoidal. Dakaris 1971: Masonry polygonal. Keying. Very little information. A fort, guards the gorge of the Louros.	NF. Assumed at 34 S 490048.00 E 4355551.00 N Z: 340 m a.s.l.

[6] Unknown site, could not be found. There is a church of Agios Giorgios occupying the summit of a conical hill between the villages of Agios Giorgios and Driofito, 5 km SW of Vathy. The location of the church is certainly suitable for a tower, but nothing confirming the site as ancient can be seen in a satellite image.

32/3	**Kleisoura?**	F	A?	Dakaris 1971, 80, 89.	"..On a right bank of Louros on a limestone hill *through which a tunnel passes*...Wall of unworked stone". E and N sides ca. 150 m long. Very vague description. This is the only locality where a tunnel passes through a hill, but nothing visible in the satellite image. A fort, guards the gorge of the Louros.	NF. Assumed at 34 S 490262.00 E 4356809.00 N Z: 200–260 m a.s.l.
33/3	**Kato Mousiotitsa, Gephyra Zeta?**	F	CH?	Hammond 1967, 157; Dakaris 1971, 80; Satellite image.	Built on a very steep slope on the right bank of the river, S of Kato Mousiotitsa village. Curtain 3 m thick, several jogs or offsets. A tower in the N end (downslope?). A second wall curves upwards from the tower, to enclose the area? Polygonal masonry. One wall is visible in the satellite image. A fort guarding the N end of the Louros gorge.	N. 34 S 485548.00 E 4361474.00 N Z: 265–300 m a.s.l.
34/3	**Sistrouni(on)**	F	CH?	Hammond 1967, 165, 660,pl. IX,c; Dakaris 1971, 75, 81; Satellite image.	Walls in the NW, other sides protected by cliffs. Size ca. 160 x 40 m. Circumference 650 m, 2.5 ha. Curtain 2.9 m thick. A crosswall in SW, separating an acropolis from the rest. 4 jogs, 2 towers, one 5.4 m wide, projecting 4 m. Within the walls, a cistern, 7 m in diameter. Masonry ashlar/trapezoidal. Seen well in satellite image.	N. 34 S 473685.00 E 4362612.00 N Z: 473–514 m a.s.l.
35/3	**Mamakou, Ellenika, Ellenika tou Mamakou**	F	CH	Hammond 1967, 75; Dakaris 1972, 95, 133; Mouselimis 2001, 51-53; Visit in 2005.	Scattered blocks said to be from a Hellenistic fort found in 1960 during a road construction. Interpreted as a triangular fort with a circumference of 300 m, 0.4 ha. Walls along the N and E sides, gorge in S. Masonry isodomic ashlar/trapezoidal, quarry face. Visited in 2005 but location unclear.	Y, 2005, unclear location. Assumed at 34 S 467914.00 E 4359286.00 N Z: 319 m a.s.l.
36/3	**Gardiki, Logkates, Koutsiates,**	CW	MM	Visit in 2005; Forsén *et al.* 2011, 114; Satellite image.	Turkish fortified village visited and surveyed during the Thesprotia Expedition fieldwork in 2005, site number PS 24.	Y, 2005. 34 S 463803.00 E

	PS 24				Walls on the downhill, W half. Entrance on the NE side, above the settlement. Rounded tower in NW. Concrete WWII AA-emplacement built within.	4359600.00 N Z: 595–607 m a.s.l.
37/3	**Kioteza, Agora, Liongati**	F	CH	Dakaris 1972, 138-139; Suha 2011, 216-223, figs. 12-18.	ENE of Agora village, on a distinct peak. Circumference 250–300 m, 0.4 ha. Cliffs all over, saddle on NE side. Fortifications in NE corner of the summit, 140 m traceable but badly destroyed. Curtains 2.1–3.1 m thick. 1 tower, 6 x 6 m in SE tip, foundation filled with rubble. 1 postern, w. 1.15–1.2 m half way across the curtain. Postern flanked by a wall projection on its E side, projection 2 m. Polygonal masonry, faint drafted corner. Dated by Suha 2011 as A/III BC. However, scanty remains not possible to properly date. Could be anything from V to II BC.	Y, 2005–2008. 34 S 462874.00 E 4359970.00 N Z: 360 m a.s.l.
38/3	**Agios Donatos Zervochoriou, Zervochori, Dragoumi**	F	H (+RB)	Hammond 1967, 71; Dakaris 1972, 138-139; Suha 2009; Suha 2011, 203-215, figs. 1-11; Suha 2019b, 79-80.	Fortifications along the S and E sides, cliffs in N. Size ca. 200 x 60 m, 1.2 ha. Curtains 1.9–3.2 m thick, possibly compartmented. 2 jogs in SE corner. In E tip a quadrangular tower with hollow ground story, w. 7.3, d. 6.5 m, walls 1.0-1.1 m thick. Door, 0.95 m wide in SW corner. 2 gates ca. 2 m wide in SE & NE. Within the walls, a large Roman *villa rustica* which re-used the tower. Masonry well cut, quarry-faced medium sized polygonal. Corners drafted, vertical grooves. Dated by Suha 2009 & 2011 to A/III BC.	Y, 2004–2010. 34 S 462295.00 E 4360795.00 N Z: 200–235 m a.s.l.
39/3	**Margariti**	F	MM	Smiris 2002, 132-134, figs. 109-111; Kastrologos: Castles of Greece; Satellite image.	Medieval castle in the SE part of Margariti. Polygonal in shape. 1 large round tower in the S tip, gate in W. Built by the Ottomans in 1549 over earlier Byzantine remains.	N. 34 S 451704.00 E 4356282.00 N Z: 160 m a.s.l.
40/3	**Paliokastro Morfis**	CW?	CH?	Dakaris 1972, 142-143.	On a S–N hill with its N side rising higher. Estimated size of the circuit 490 x 35-80 m, 2.5 ha. Within the walls are remains of	NF. Assumed at 34 S

					houses. Stretches of curtain walls visible, masonry polygonal. Vague description of fortifications.	449856.00 E 4359046.00 N Z: 160 m a.s.l.
41/3	**Karteri, Karteriza, Kastro tou Malakinou**	F	A?	Dakaris 1972, 144; Mouselimis 2001, 60-61.	On the summit of a conical hill called Malakinou rising to 320 masl. Fort, nearly rectangular in shape, 50 x 20 m, 0.1 ha. On the W side a 1 m wide postern. No further information.	NF. Assumed at 34 S 447963.00 E 4360057.00 N Z: 320 m a.s.l.
42/3	**Dymokastro, Ellinokastro, Elimokastro, Erimokastro, Karavostasi, Perdhika?** ***Elina***	CW	CH-H	Hammond 1967, 78, plan 8; Dakaris 1972, 102-104, 145-146, fig.47; Lazari *et al.* 2008, 22-38.	Large fortified settlement high above modern Karavostasi. Consists of 3 acropoleis A-C, total area ca. 22 ha. Cliffs in S & W, walls only in E & NE. In all phases compartmented curtains 2.2–3.9 m thick, still standing up to 4 m high in places. Masonry well cut, quarry-faced medium polygonal. Drafted corners, vertical grooves. **A)** Circumference 1060 m, 5.3 ha. Unwalled in S, walls on other sides. 5 rectangular towers, w. 5-6 m x 6–7 m deep. In addition, the largest tower on site 14 m wide by 11.5 m deep in SE. Main gate, 2.5 m wide also in SE, protected by the large tower to its S side, postern in W. Lazari *et al.* 2008 dated to II/IV BC. Dated to the end of IV BC. **B)** New addition towards W, additional 1.8 ha with 230 m of walls and 3 towers in N & W. **C)** Last addition to the NW of A & B, descending all the way to the waterline to the harbor “Skala Ellinikou”. Area 15.1 ha, 400 m of additional walls on N side, S still open. 1 tower half way across. Dated to the III–II BC.	Y, 2005–2009. 34 S 439160.00 E 4353702.00 N Z: 110–215 m a.s.l.
43/3	**Polyneri, Koutsi**	CW	CH + MM	Hammond 1967, 79-80, 659, plan 9; Dakaris	In Polyneri village. Circumference 1.2 km, 5.5 ha. Curtain walls 3.4–3.5 m thick in E, partly in W and N alternating with steep	Y, 2013. 34 S

				1972, 100-102, 203, fig. 46.	cliffs requiring no walls. 3 quadrangular towers in SE, S & SW, 2 jogs in W. 2 frontal gates. E gate 4.3 m wide, narrows to 3.2 at the end of the corridor. W gate 5 m wide at the outer end, 4.1 m inside; modern road still passes through the gate. Gates enfiladed by wall projections, not towers. Polygonal masonry, facing treatment varies. Mainly quarry face, some tooled face and in W gate broached work. Drafted corners. In NW corner a triangular Byzantine fort, circumference 160 m, 0.125 ha. Guards the narrow inland end of the valley of Plataria.	442247.00 E 4361825.00 N Z: 280–300 m a.s.l.
44/3	**Kastro tis Voulgaras, Gourgara, Vourgara, Faskomilia, Nista**	R	RB-MM?	Hammond 1967, 80; Dakaris 1972, 102, 145; Mouselimis 2001, 57-58; Kastrologos: Castles of Greece.	On the summit of Mt. Voulgaras, size ca. 75 x 150–175 m. Curtains 2–2.5 m thick, rubble masonry. Assumed dating ca. 14th century AD.	NF. Assumed at 34 S 440816.00 E 4368068.00 N Z: 530 m a.s.l.
45/3	**Paramythia Castle, Aidonat, *Photike***	CW	H+ RB+MM	Hammond 1967, 72-74, 660; Dakaris 1972, 99, 140-141.	High above Paramythia. Circumference 2.1 km. Fortifications on the S, W and NW sides, steep cliffs with no walls in N & NE. Polygonal blocks in the W wall, beneath mortared rubble: Thickness unobtainable. 1 postern, 1.2 m wide in NE. Hammond 1967 claimed a subterranean entry through a cave in the E tip, with grooves for a portcullis in side walls. Cave is visible but completely overgrown. Masonry well cut medium polygonal in the W side, trapezoidal blocks above the claimed cave entrance. Quarry face in both. The Roman settlement of Photike moved to this location by the VI AD. Inhabited until the 19th century AD, Turkish name "Aidonat" (=Agios Donatos).	Y, 2005–2010. 34 S 458611.00 E 4369375.00 N Z: 510–590 m a.s.l.

46/3	**Pyrgos Koulia, Koulia of Bonolati, Κούλια των Μπονολάτων**	T	RB-MM	Satellite image; Kastrologos: Castles of Greece.	Byzantine tower house, *koulia,* in Paramythia. Measures some 7.7 m square, 26 m high. Dated to the latter part of the 18th or early 19th century AD.	N. 34 S 458209.00 E 4369182.00 N Z: 370 m a.s.l.
47/3	**Chrysavgi, Veliani, *Elea***	CW	H	Hammond 1967, 71-72, 660, plans 7, 22,3a, pl. XX,d; Dakaris 1972, 97-99, 139, figs. 42-44; Riginos & Lazari 2007, 27-35; Suha 2016; Suha 2019b, 76-78.	Located high on a westward-jutting plateau of the Paramythias mountain range, some 4 km S of Paramythia. Circumference 1.4–1.8 km, 10.5 ha. Massive walls in E & NE, short stretches of walls in NW & SW. Most of the perimeter surrounded by cliffs with no need for additional walling. A separate straight section of curtain, 64 m long in the NW corner of the plateau, regularly compartmented. Main gate in SW corner, below the main plateau, 2.3 m wide built utilizing a natural gully. The eastern main curtains are well preserved, up to 7 m high. Curtains peculiarly 2-leveled, lower parts 4.3–4.9 m thick while the upper part thickness is 3.15 m. 1 jog, 1 tower in NE corner, 6.4 x 5.8 m. In S tip a large reverse battery w. 13.2, d. 7.4 m. Cross-walls within the curtains. 2 posterns in E & NE, w. 1.2-2.1 m. E postern has an intact, repaired lintel block. Masonry polygonal, varying styles. Lower part masonry has some massive blocks (up to 2.0 x 2.0 m), some blocks have smooth tooled faces while some have very wide tooled margins surrounding a hammer faced bulge in the middle. Upper part masonry all over medium polygonal with quarry face. Drafted corners, several vertical grooves. Perhaps a mudbrick parapet on a stone curtain? Dated by Suha 2016 to C/IV BC.	Y, 2004–2010. 34 S 461357.00 E 4365717.00 N Z: 460–560 m a.s.l.
48/3	**Phrosini**	R	?	Visit in 2005; Dakaris 1972, 132; Mouselimis 2001, 50-51.	Oval rubble enceinte on a summit N of Phrosini village. Size 88 x 20 m. Curtains 1.3–1.6 m thick, 2 semicircular towers on the long	Y, 2005. 34 S 465633.00 E

					sides, S & N, tower walls 1 m thick. Masonry flat and narrow rubble. Dakaris 1972 claims dating of the site as Hellenistic; as rubble enclosure can be of any date.	4368058.00 N Z: 800–820 m a.s.l.
49/3	**Kalogeritsa, Kaloyeritsa, Therakisi, *Phylake?***	CW? F?	CH?	Hammond 1967, 158, plans 14, 20,9, 20,13; Dausse 2007, 213-214, 226, plates.	Two levels of fortifications, a lower outer enceinte and an Acropolis fort located on the central summit of a hill between two forks of the River Louros, S of Therakisi village and E of Kopani village. Circumference 1250 m, Acropolis walls ca. 0.6 km. Curtains 3.1 m thick. 1 tower in SE, w. 4.3 m, projecting 5.6 m. 2 gates; E tangential, w. 2.7 m, W frontal, w. 3.34 m. Masonry fine polygonal. Guards the S entrance to the Ioannina basin but also the route leading to Dodona in NW. Dausse 2007 convincingly argues the identification of this site with the ancient Phylake.	N. 34 S 488415.00 E 4370661.00 N Z: 778 m a.s.l.
50/3	**Hani Emin Aga**	F	CH?	Hammond 1967, 157-158; Satellite image.	Above the gorge of a small stream to the S. Circumference 0.8 km. Cliffs in S and W, walls in E. Wall in N corner still 8 courses high. 1 tower in the N, possibly a gate in E. “The wall is also recessed frequently”: Jogs? Indented trace? Ashlar masonry, drafted corners. Guards the routes from Ambrakia leading to the plateaus of Ioannina and Dodona.	NF. Assumed at 34 S 489735.00 E 4367099.00 N Z: 570–580 m a.s.l.
51/3	**Kalenji, Kalentzi**	F	CH	Hammond 1967, 176, 659, plan 13.	Circumference “1100 paces”. Curtains 2.8 m thick. 2 rectangular towers, one w. 8.7 m, projecting 5.65 m, the other 10.3 m wide, projection or depth unknown. Masonry in curtains well cut polygonal, ashlar in towers. Drafted corners, vertical grooves. Protects entry from the gorge of Arachthos into the valley of Kalentzi (and on to plain of Ioannina).	N. 34 S 500223.00 E 4371349.00 N Z: 670 m a.s.l.

52/2	**Ambelochori, Skloupo**	T	H	Nakas 2016, 448, 454, figs. 2-3.	The church of Agia Paraskevi in the E end of Ambelochori village. Ancient tower re-used as a church, orignal blocks visible in the walls. Masonry polygonal, drafted corners. Nakas 2016 dated to ca. 300 BC. Views towards the south, to Tsoumerka region.	N. Assumed at 34 S 502931.00 E 4375525.00 N Z: 880–890 m a.s.l.
53/3	**Sirouno, Khouliaradhes, Kastelio, Kastelli**	F	CH	Hammond 1967, 176-177; Kyrkou 2014, 2-3, figs. 1-12.	Location known as Kastelio or Kastelli on the summit of Sirouno ridge. Circumference ca. “400 paces”. Cliffs in N & W, curtain 1.05 m thick on other sides. Tower in S tip, “8 paces” wide by “10 paces” deep. Polygonal masonry, drafted corners. Refuge for settlement below, at the location known as Kambos.	NF. Assumed at 34 S 502687.00 E 4378358.00 N Z: 1080 m a.s.l.
54/3	**Tsouka**	T	H	Hammond 1967, 177; Nakas 2016, 448-449, 452-454, figs. 4-6.	280 m S of monastery of Tsouka on a narrow ridge above the Arachthos gorge. W wall best preserved, ca. 10 m long. Solitary rectangular tower, size originally 11 x 7 m. Masonry quarry-faced polygonal/pseudo-isodomic trapezoidal. Nakas 2016 dated to ca. 300 BC. Guards the Arachthos gorge below.	NF. Assumed at 34 S 497663.00 E 4378138.00 N Z: 910 m a.s.l.
55/3	**Episkopiko, Kastri**	F	CH	Pliakou 2007, 138-140, pl. 12-14, plan 14; Satellite image.	SSE of Episkopiko village on a summit known as Kastri. Steep cliffs in E & W, gentle slope in N. 2 concentric lines of walls along the N and E-SE sides. Outer, lower-lying curtain has 3 jogs, no towers. 1 gate, 2.5 m wide in NE corner. Inner enceinte has 3 rectangular towers, 2 large in N and 1 small in SE. Masonry polygonal and ashlar, quarry face, no drafting. Pliakou classified as a *phrourion* guarding the approaches to Ioannina basin from the S.	N. 34 S 487935.00 E 4375990.00 N Z: 730–775 m a.s.l.
56/3	**Dodona acropolis**	F	H	Hammond 1967, 169, plan 12; Dakaris 1993, 34-35, figs 15 & 16;	Circumference 0.75 km, area 3.4 ha. Curtains 3.0–3.6 m thick, compartmented at 2.8–3.4 m intervals. 2 jogs in the SE corner, 9 rectangular hollow-based towers, w. 6.9-8.2 x d. 8.0-10.1 m on	Y, 2013 34 S 481819.00 E

				Suha 2019a, Suha 2019b, 92-93.	the W, N & E sides. Tower walls ca. 1 m thick, double-faced masonry. Frontal gate in E, between 2 towers. Corridor 3.7 m wide, 9.05/9.64 m long. Half way across, 2 pairs of jambs, openings in between 2.7 and 3 m wide. The gate stood behind the inner pair. Both pairs of jambs probably once covered by vaulting. Tangential gate in SW, flanked by a tower in W and wall arm in E. Corridor 4.2 m wide, gate 3.0 m, probably also covered by an arch. Postern in the middle of the S curtain, corridor 1.9 m wide, external width 1.6 m. Masonry quarry-faced ashlar, some trapezoidal. Dated by Dakaris 1993 to A/III BC.	4377646.00 N Z: 650–665 m a.s.l.
57/3 57/4 57/5	**Vereniki**	F	A	Hammond 1967, 188-189, Plan 20,19, pl. XII,b; Mouselimis 2001, 41-42.	N of Vereniki village on a high ridge between two gorges at a location known as Portes. Circumference ca. 1 km. NE and E sides protected by fortifications, cliffs in N. Easiest approach along the saddle in NE. Curtain 2.8 m thick. Tangential gate 2.2 m wide, 4.7 m deep, flanked in S by a tower 5.5 m wide, projecting 4 m. Masonry good quality quarry-faced ashlar, some trapezoidal, some keyed blocks.	NF. Assumed at 34 S 460930.00 E 4379621.00 N Z: 600 m a.s.l.
58/3 58/4 58/5	**Kastro tis Salonikis**	F	A?	Dakaris 1972, 132; Mouselimis 2001, 70-71.	W of Saloniki village on a lower peak of Mt. Chionistra called Kastri (1103 m a.s.l.). Circumference 150 m, 0.125 ha. Triangular in shape, E side 53 m long, W 40 m, N side 45 m. No further information.	NF. Assumed at 34 S 460753.00 E 4374766.00 N Z: 1100 m a.s.l.
59/3 59/5	**Eleftherochori Castle**	F	MM	Satellite image; Kastrologos: Castles of Greece.	Ruined castle above modern Egnatia Odos. Somewhat L- shaped, with a large octagonal tower protruding from the S wall. Said to be a “hospitium”.	N. 34 S 459970.00 E 4372266.00 N Z: 740 m a.s.l.

60/3 **60/4**	**Kastro Kallitheas, Tsourilas**	F	CH	Hammond 1967, 88; Dakaris 1972, 148; Mouselimis 2001, 63-65.	Mouselimis 2001: Located east of the Kallithea village on the summit of Ai Lias (=Agios Elias?) with a chapel of same name. Site located on the W side of the summit. Circumference ca. 800 m, size ca. 200 x 100 m. Walls in N & S, cliffs in E & W. S wall 80 m long, 3 m thick, 3 m high. Gate, w. 1.9 m in NW corner, postern in the opposite wall. Masonry ashlar/trapezoidal, flat and narrow. Keying, no drafting. Guards the entry upstream of Kalamas.	NF. Assumed at 34 S 454120.00 E 4375565.00 N Z: 530 m a.s.l.
61/3 **61/4**	**Skala Zorianou, Skala Zorgianou, Skala Filiaton, Pyrgos tuo Venetzianou**	F (+T)	CH +MM	Hammond 1967, 86; Dakaris 1972, 152-153. Mouselimis 2001, 34-35; satellite image.	Medieval tower "Πύργος του Βενετσιάνου" still partly standing. Around it, an older triangular enceinte, circumference 1.2–2.25 km, 8–10 ha.[7] Curtains 2.95–3.2 m thick. S and E walls all but disappeared, N wall still standing 40 m long, 2.95 m thick, 2 m high. 1 gate and 1 tower projecting 2.7 m. Masonry long and narrow ashlars, hammer/quarry faced (?) Protects a ford and the E side of gorge of the Kalamas. The opposite end is guarded by Kastraki Sideris (69).	N. 34 S 445911.00 E 4379921.00 N Z: 50 m a.s.l.
62/3 **62/4**	**Doliani,** ***Phanote***	CW	CH	Hammond 1967, 86-87, pl. IV,b; Dakaris 1972, 112, 154-156, fig. 56; Kanta-Kitsou & Lambrou 2008; Suha 2019a; Suha 2019b, 87-89.	2 circuits, total area ca. 5 ha. On the summit the acropolis circuit, 2 ha, 360 m in circumference. In W, 2 straight parallel spur walls run to the edge of the cliffs. Curtains 2.7-4.0 m thick, several irregular jogs. 2 large rectangular batteries in the E side of the upper circuit, w. 9.1–9.8 x d.11.5–14.5 m. In N spur wall 1 rectangular tower, 7.35 m square, projecting part divided to 4 compartments. 1 wide but shallow tower in the W end of S spur. Lower town in the NE-E surrounded by walls 320 m long, S side unwalled. 2 towers, w. 6.3–6.6 x d. 8.2–8.7 m with **internal crosswalls** (4+2 compartments). Frontal gate between the towers. Corridor 8.5 m long, w. 5.1 m in the inside end and 5.7 m	Y, 2004–2015. 34 S 444424.00 E 4376285.00 N Z: 40–84 m a.s.l.

[7] Circumference 1200–1400 m according to Dakaris 1972, 153; 2250 m according to Mouselimis 2001, 34-35.

					at external tip. Gate located at a depth of 4.9 m. Width 2.7 m, covered by an **early true arch** of 5 blocks, rising from decorative "consoles". Postern in SW. Masonry in all walls flat and narrow and trapezoidal. Drafted corners. Lower town walls compartmented, others uncertain. Dakaris 1972 argued that both the acropolis and lower town walls were contemporaneous, mentioning IV BC (also probable V BC) sherds found on site. Kanta-Kitsou & Lambrou date both enceintes to II/IV BC, built in one phase.	
63/3 **63/4**	**Goumani,** ***Gitana***	CW	H	Hammond 1967, 83-86, plan 10, pls. XXV,b, XIX,b; Dakaris 1972, 108- 111, figs. 53-55; Kanta-Kitsou 2008; Suha 2019a; Suha 2019b, 82- 87; Suha 2019c.	Circumference 2.5 km, 28.7 ha. 3 different features: **A)** Lower town walls: Compartmented, 4 m thick in the NW sector, 2–2.5 m in W & S. In NW are 5 intact (+1 ruined) towers, w. 6.5–7.7 m, d. 10.2–10.9 m, with **internal crosswalls** (4+2 compartments). 3 frontal gates, in N, W & SE, width 2.5–3.5 m. Masonry mainly quarry-faced polygonal. Near the W gate a course of square tooled slabs set upright topped by others laid flat forming a decorative band. Drafted corners, vertical grooves. Mudbrick superstructure. **B)** Semicircular battery on Vrysella, w. 14 m, d. 12.5 m. Solid base, wedge–shaped compartments. All foundation blocks connected with 2 dovetail clamps per side, internal walls tied to outer skin with 1 clamp per wall. Masonry of the foundation quarry-faced trapezoidal, but chamber walls quarry-faced polygonal. **C)** Crosswall *(diateichisma)* running S-N across the lower town, reducing the area to ca. 5 ha. Dates by Kanta-Kitsou 2008 and Suha 2019a, 2019b: A) C–D/IV BC, B) A/III BC, C) post-167 BC?	Y, 2006–2015. 34 S 436573.00 E 4380395.00 N Z: A) Lower town 20–80 m a.s.l., B) battery at 170 m a.s.l.

64/3 64/4	**Igoumenitsa Castle**	F	RB-MM	Dakaris 1972, 204; Smiris 2002, 135-136, figs. 112-115, figs. 112-115.	Medieval/modern castle of elongated pentagonal shape, long axis NW–SE. 4 rectangular towers. Gate flanked by towers in E. NE corner forms an inner citadel. First mention in 1391. Dakaris 1972 reports "older walls" below the present fortifications, considering them as being of probably Roman date.	NF. Assumed at 34 S 436893.00 E 4372564.00 N Z: 20 m a.s.l.
65/3 65/4	**Pyrgos Ragiou**	F	H+ MM	Hammond 1967, 82-83; Dakaris 1972, 104, fig. 52; Mouselimis 2001, 31-34; Preka-Alexandri 1993, 353-356; Suha 2019b, 80-82, figs. 4-5.	On a conical hill in the Kalamas delta. Size 70 x 100 m, circumference ca. 270 m. Compartmented curtains 3.2–3.8 m thick. **Double outer facing in towers and curtains!** 3 large towers, w. 6.5–7.0 m, d. 9.0–9.5 m, all with **internal crosswalls**, 4+2 compartments.[8] Small tower in W, 6.5 x 7.4 m, with 2+2 compartments. Monumental tangential gateway in S, 16 m long, 4.5–5 m wide with 3 sets of jambs reducing the width of openings to 2.4–3.0 m. In N a postern, w. 1.6 m. In the middle of the site a rock-cut cistern, 13 x 13 x 5 m. Masonry mostly trapezoidal, some polygonal, all quarry-faced. The insides of the gate and postern have tooled face. Drafted corners, vertical grooves, drains in walls. Mudbrick superstructure. A *proteichisma* 6 m from the NE wall?[9] An Ottoman tower-house *(Koulia)* obscuring the N tower. Dakaris 1972 dated to the V BC, before 427 BC; finds of the excavations in the 1970s to 1990s vary from the Paleolithic to Ottoman periods, but the majority concentrates on the Classical–Hellenistic periods. Suha 2019b dates to D/IV BC.	Y, 2004–2015. 34 S 431328.00 E 4376720.00 N Z: 50 m a.s.l.

[8] Cf. tower at Megalo Gardiki/Passaron (80) and tower B 16 at Phoinike (116).
[9] More likely a terrace wall, not necessarily a proteichisma.

66/4	**Lygia A-C, Lygaria, Torone?**	F	CH	Hammond 1967, 81-82; Dakaris 1972, 105-108, figs. 50-51; Spanodimos 2019, 251-264, figs. 1-12.	**Lygia A**: Area 1.2 ha. Semicircular enceinte on the NE hill, to the S an additional stretch of walls running S-N with an eastward opening gate flanked by two towers. Cliffs in N, fortifications in E, S & W. Main curtains 3–3.5 m thick, 2.1 m in the additional stretch. 7 towers located 17–31 m apart.; 1 rectangular and **6 semicircular with one bisecting crosswall**[10], diameters 6.6-9.9 m, projecting 3.3–6.6 m. The gate in S flanked by 2 of the semicircular towers. Masonry pseudo-isodomic trapezoidal, quarry face. **Lygia B:** 20 ha, walls in the N tip of the central peninsula. Curtains 3 m thick. Indented trace; 4 jogs, each ca. 32m long, projecting 2.6–2.7 m. 1 rectangular tower, 6.6 m square in N tip. Masonry rubble. **Lygia C**: On the western peninsula, 57.8 ha, walls in the S, also with rubble masonry. Mudbrick superstructure in all phases. Traditional sequence and dating by Dakaris 1972; A) Before 427 BC, B) 427–343 BC, C) 340s BC. New sequence by Spanodimos 2019: First phase consists of rubble masonry Lygia C & B, trapezoidal fortifications of A belong to second phase. Yet none are earlier than early IV BC.	Y, 2004. 34 S 430091.00 E 4374846.00 N Z: 30–60 m a.s.l.
67/4	**Mastilitsa, Masklinitsa**	CW?	CH?	Kanta-Kitsou 2009, 23-24; Riginos *et al.* 2014, 62-65; Visit in 2009.	Circumference 670 m. Curtains 3–3.8 m thick, 1 jog. 3 gates/posterns, in E, W & S. Masonry rubble. Mudbrick superstructure? Kanta–Kitsou 2009: Shrine within dated VII–VI BC, fortifications Late Classical–Hellenistic. Riginos *et al.* 2014 date the walls to the end of VI BC.	Y, 2009, location unclear. Assumed at 34 S 431317.00 E

[10] Cf. Ambrakia (10), the tower in the N tip near the Kastro.

						4382931.00 N Z: 95–100 m a.s.l.
68/4	**Kasnetsi / Kalia**	F	RB-MM	Dakaris 1972, 205, fig. 58; Mouselimis 2001, 153; Kastrologos: Castles of Greece.	Byzantine fort NW of Filiates, to the right of the road between Filiates and Sagiada. Circumference 360 m, 93 x 51 m in NNW-SSE. Curtains 4.5 m high, 1.9–2 m thick. 7 rectanglar towers, w. 6–7.5 m, projecting 4.5–6 m. Tower walls 1.5 m thick. 3 gates, W, S & N. Controls route from Filiates to Sagiada.	N. 34 S 436312.00 E 4385854.00 N Z: 260 m a.s.l.
69/4	**Kastraki Sideris, »Φρύκτορια της Σίδερης», Kiouteti**	T	CH	Mouselimis 2001, 134; Dakaris 1972, 153-154.	Between Parapotamos and Sideri, 20 m S of the chapel of Panagia. A tower, 7 m square, walls 2.25–2.45 m thick. Floor area 2.25 x 2.1 m. No mention of masonry. A watchower guarding the W end of Kalamas gorge, the opposite end of which is guarded by Skala Zorianou (61).	N. 34 S 443813.00 E 4381308.00 N Z: 230 m a.s.l.
70/4 **70/5**	**Uzdina, Pente Ekklisies**	F	CH	Hammond 1967, 89; Dakaris 1972, 149; Papadopoulou 2014, 22-27.	Older enceinte surrounding several Byzantine churches. Circumference 450 m, 0.5 ha. Cliffs on the W side, fortifications in E up to 4.7 m high. 9 jogs, 2 towers, w. 7–8, d. 2.5–3 m. Frontal gate in E, w.1.7 m, between the towers. Masonry quarry–faced trapezoidal and polygonal, block sizes ranging from large to very small. Drafted corners. Guards the gorge of Kalamas to the N. Ruined (Hellenistic?) bridge piers in river below.	Y, 2013. 34 S 453574.00 m E 4382590.00 m N Z: 140–150 m a.s.l.
71/4 **71/5**	**Vigla Keramitsas**	T	A?	Dakaris 1972, 157; Mouselimis 2001, 132-133.	Dakaris 1972: NW of Raveni, 2 km south of Keramitsa, on a round hill 615 m high. Pentagonal fort, area 0.1 ha, ca. 32 x 28 m. Curtains 1.5 m thick. Mouselimis 2001: 2 watchposts (φυλάκια). In N, a tower 4.2 x 3.3 m surrounded by pentagonal enclosure 107.5 m in circumference. Second tower, ca. 10 x 12 m, located 50 m to the S, also surrounded by ruined enclosure. Masonry of all unknown.	NF. Assumed at 34 S 451944.00 E 4390220.00 N Z: 615 m a.s.l.

					Guards the border between Kestrine and Molossia.	
72/4 **72/5**	**Raveni**	F	CH	Hammond 1967, 186-187, 660, plan 16; Dakaris 1972, 112, 156-157, fig. 57.	Circumference 590-800 m.[11] Curtains 2.8–3.6 m thick. Tangential gate, w.1.5–2.8 m in N. 6 rectangular towers, w. 5.0–6.5 m, projecting 3.3–9.1 m. All with **internal cross-walls**, 4+2 compartments. Masonry predominantly polygonal, quarry face. Guards the confluence of Kalamas (in E) and its tributary, the Gaidharos (in W) just S of the site.	Y, 2007. 34 S 455897.00 E 4388920.00 N Z: 280–290 m a.s.l.
73/4 **73/5**	**Vrousina**	F	CH?	Hammond 1967, 187, 661.	On a ridge above the confluence of Kalamas and its tributary, the Tripomeno Remma. Circumference ca. 300 m. Walls in SW, older ashlar masonry covered by newer mortared rubble. Guards the crossing and the confluence of rivers. Ruined bridge in the river below.	NF. Assumed at 458438.00 E 4388716.00 N Z: 145 m a.s.l.
74/4 **74/5**	**Kato Zalongo**	F	A?	Hammond 1967, 188, plan 21,12; Mouselimis 2001, 67-69.	Circumference “550 paces”, 75 x 55 m. Cliffs in W, saddle in NE. Preserved wall only in S, 2.7–4.2 m thick.[12] Gate, 3.3 m wide defended by a tower in SW. Masonry isodomic ashlar.	NF. Assumed at 34 S 459681.00 E 4386339.00 N Z: 255–260 m a.s.l.
75/4 **75/5**	**Psina, Kastri**	T	H	Hammond 1967, 190-191; Mouselimis 2001, 73-74; Nakas 2016, 450-454, figs. 7-10.	1 km N of Psina, E of Dragopsa at the end of a long, narrow ridge. Hammond 1967: Circumference “650 paces”, w. “30-150 paces”. 2 jogs, no towers. Mouselimis 2001: Site long and narrow, 400 m long by 19 m wide, a gate in E. Nakas 2016: A tower, measuring 10.5 x 7 m is the most prominent feature on site, Hammond’s walls are a courtyard around it. Tower walls 1 m thick, built of two faces bound by	NF. Assumed at 34 S 473928.00 E 4382457.00 N Z: 630 m a.s.l.

[11] 590 m according to Dakaris, 800 m according to Hammond.
[12] 4.2 m according to Hammond, 2.7 m according to Mouselimis.

					headers. Masonry polygonal and “rectangular”. Deep drafting in corners. Nakas 2016 dates to ca. 300 BC. Good views all around, especially towards Dodona in S.	
76/5	**Dourouti**	F	MM	Satellite image.	Concrete artillery positions, cf. the summit of Megalo Gardiki (80): Doubtlessly modern; Turkish, war of 1912-13?	N. 34 S 484956.00 E 4384698.00 N Z: 775 m a.s.l.
77/5	**Kastritsa,** ***Tekmon, Eurymenae***	CW	H (+RB)	Hammond 1967, 173-174, plans 15, 20 8, pl. XI,a; Pliakou 2007, 108-135; Yiouni *et al.* 2015; Suha 2019b, 91-92.	SE of Lake Pambotis on a high ridge. 3 ancient phases topped by a Byzantine phase: **I)** Circumference 2.6–3.2 km, area 34.5 ha. Compartmented curtains, 2.6 m thick in NE, N and W, occasional jogs and one tower at a gate. 3 gates and 3 posterns around the circuit. Easiest approach along the summit of the ridge from the S; Strongest fortifications there. In SW sector a straight compartmented curtain 3.6–3.9 m thick reinforced by 2 small towers, dimensions unknown, located 35 m apart. A walled-up postern, possibly covered by a semi-corbel with diagonally cut consoles located at the junction of this and the next curtain. On the summit the fortifications form a large U–shaped projection towards the S. Originally in its SW and SE corners were large rectangular towers, w. 9 m x d.11.6–11.9 m, projecting ca. 8 m. Yiouni *et al.* 2015 analyze the walls, differentiate 3 phases but give no dates to any of them. Pliakou 2007 dates the walls to B/III BC, Suha 2019b to the last third of IV BC. **II)** Later the SE corner tower was enlarged into a **huge pentagonal battery**, w. 9 x d. 24 m, a unique structure in Epirus.	Y, 2007–2015 34 S 492782.00 E 4386503.00 N Z: 650–665 m a.s.l.

					Yiouni *et al.* 2015 do not give any dates, Pliakou 2007 does not mention this phase. Suha 2019b dates most likely A/III BC. **III)** Soon thereafter the battery was heightened from the original 2.7 m. Again, Yiouni et at 2015 do not give any dates and Pliakou 2007 does not mention this. Suha 2019b dates most likely to the mid–III BC. Some 3.5 m in front of the pentagonal battery and walls along the bottom of the U-shaped projection a *proteichisma* was added during phase II or III. Masonry carefully cut medium sized polygonal with quarry face and drafted corners. According to Yiouni *et al.* 2015, the excavation of the pentagonal tower and the *proteichisma* in the 2010s yielded numerous finds in connection to a siege (of 219, 217 or 167 BC?).	
78/5	**Gradetsi,** **Megali Gotista**	F	H	Hammond 1967, 181.	N of village of Megali Gotista on the site of the church of Panagia Gradetsiotissa. Circumference "1000 paces". Three precipitous sides, walls in NE. Curtain 2.6 m thick, jogs, no towers. Masonry large ashlar, corners drafted. Guarded the approaches to the Ioannina basin from the E.	N. 34 S 504159.00 E 4394013.00 N Z: 1275 m a.s.l.
79/5	**Kastro of Ioannina,** ***(Passaron?)***	CW	H (+BR-MM)	Pliakou 2007, 143-151, pl. 16-19, plan 15; Pliakou 2011.	Classical-Hellenistic fortification walls found underneath later fortifications at the Tower of Thomas on the W side of the Kastro of Ioannina. Quarry-faced ashlar masonry, 1 vertical groove. Excavations in the Kastro and the Old Town have yielded finds ranging from the late V BC to I AD, ashlar walls dated to the early III BC. Note: Pliakou argues that *this, not Megalo Gardiki (80) should be identified with ancient Passaron*, so that the Temple of Zeus Areios would also have located within the wall circuit.	Y, 2004–2015. 34 S 487810.00 E 4391133.00 N Z: 475 m a.s.l.

80/5	**Megalo Gardiki, Gardiki, Kastri,** ***(Passaron?)***	CW	H (+MM)	Hammond 1967, 181-182; Pliakou 2007, 60-90, pls.2-4; Pliakou *et al.* 2015; Suha 2019b, 89-91, 102-115, fig.12.	Circumference ca. 1.35 km, destroyed in the N (Romans in 167 BC?). Area 8.95 ha. Curtains 3.2–3.5 m thick, compartmented at intervals of 2.1–2.9 m. 7 jogs around the enceinte. 5 towers along the NE side; 2 large in the bends of curtains, w. 6.1–6.4 m, d. 10.4 m[13], 3 smaller towers in between, w. 6.5–6.7 m, d. 5.4–8.0 m. Completely ruined tower in SE corner. 2 towers S, w. 5.8, d.8.5 & 10.4 x 8.3 m. In W, a tower, w. 6.2, d.7.1 m. **All towers have crosswalls**, large ones with **4+2** compartments, small ones with **2+2**, the wide in S with **3+3**. In SW a frontal gate 3.0–3.5 m wide, opening aslant across the curtain towards S, flanked by a jog on its E side. Near the W tip a postern, w. 1.6 m, opens towards the W, flanked by a tower 6.2 x 7.1 m in the N. Possible ruined postern in NE, on the W side of the large corner tower. Polygonal masonry of several types, large blocks below and smaller, more rectangular above. Along S side the masonry is massive in scale. Some upper blocks with up to 15 corners. Quarry face, also smoother, yet not quite tooled. Vertical grooves. Pliakou 2007 dated the walls through finds from the foundations of the curtains to A/III BC. In N sector a curtain was dated to post–167 BC. Suha 2019b dated the walls to D/IV BC. Note: Pliakou argues the identification of this site with Passaron as false, identifying Passaron with the site at *Kastro of Ioannina (79)*! On the summit Turkish concrete artillery positions of 1912–13, cf. Dourouti (76).	Y, 2013. 34 S 480009.00 E 4395610.00 N Z: 740–750 m a.s.l.

[13] Cf. towers T 2–T 4 at Pyrgos Ragiou (65) and tower B 16 at Phoinike (116).

81/4 **81/5**	**Klimatia, Veltsista**	CW? F?	CH?	Hammond 1967, 191-192, plan 20,10-11, pl. XI,b.	SW of Klimatia village at the fork of the stream Veltsiotikos and its tributary. Circumference "450 paces". Short sections of walls left. In N, a 20 m stretch of curtain 3.0 m thick, plus 2 towers. First tower w. 3.6 m wide, projecting 2.2 m, with walls 70 cm thick. The other 7 x 6.1 m with **internal crosswalls forming a T, 3 compartments**. Hammond's plate XI b of the same tower shows a door and possible remains of its semicircular corbel arch?[14] In S, a tower and a gate, w. 2.5 m. Masonry ashlar, drafted corners. Invisible in the satellite image.	NF. Assumed at 34 S 471617.00 E 4394843.00 N Z: 400–410 m a.s.l.
82/4 **82/5**	**Agios Nikolaos (of Klimatia)**	T?	A?	Hammond 1967, 192-193.	At the chapel of Agios Nikolaos "25 minutes" NW of Klimatia. In W of the site one wall 7.8 m long, another 1.4 m high/4 courses. Curtain thickness 2.7 m. No further information, vague description. The chapel is visible in satellite image, nothing else.	NF. Assumed at 34 S 470272.00 E 4396980.00 N Z: 393 m a.s.l.
83/4 **83/5**	**Paliouri, Dragoumi** (Kalamas valley)	CW	CH	Hammond 1967, 192, 695; Dausse 2007, 212–213, 217–218, plates.	2 km W of Paliouri village. Fortified terraces on the level of the chapel of Agios Nikolaos, below a rocky summit. Circumference over 1 km. Overgrown, in bad condition with max. 3 courses of blocks visible on the W side. Masonry polygonal. Overlooks the River Kalamas and its confluence with Smolitsas.	NF. Assumed at 34 S 466991.00 E 4394894.00 N Z: 560 m a.s.l.
84/4 **84/5**	**Despotikon, Paliokastro Ai Minas, Paleokastro Despotikou, *Ilium?***	F	H	Hammond 1967, 197-198, pl. XI,c; Mouselimis 2001, 87; Faklari 2007, 771-773, figs. 22-26.	2 km W of Despotikon village on the summit of N-S ridge. Site known as Paliokastro. Preserved size ca. 150 x 20 m. Curtains 3.6 m thick, 1 jog (?). 1 tower, ca. 6.2 or 8.1 m square, another ruined tower in N?[15] Postern, 1.3 m wide opening through a jog near the NW corner. Masonry massive ashlars (up to 3.12 x 0.92 x 0.69 m), also some trapezoidal. Stone hard reddish sandstone, quarry face.	NF. Assumed at 34 S 460988.00 E 4398744.00 N Z: 750 m a.s.l.

[14] Lower block with slight curvature visible in the photo; compare that with the N gate of Kastri Rizovouni /Batiae (21).
[15] According to Hammond one tower is 6.2 m square, according to Mouselimis one tower is 8.1 m square and there is a second, ruined tower in N.

					Faklari 2007: dated to early III BC–167 BC. A *phrourion* controlling the access from the Kalamas valley towards the Drino valley.	
85/4 **85/5**	**Gardiki Filiaton,** **Kastri,** **Pyrgos,** **Pyrgos tou Gardikiou (Filiaton),** **Agios Georgios,** **Glousta?**	F	H	Hammond 1967, 91-92; Dakaris 1972, 158-159; Vokotopoulou 1973, 305, pl.264β, 265α; Mouselimis 2001, 37-39.	N of Keramitsa, 500 m S of Gardiki Filiaton, "45 min N of Plagia (Glousta)" on a round hill between rivers Tsouritsa and Langavitsa converging to the S.[16] Circumference 500 m, 1.4 ha. Fortifications in the NW, N and NE sides. Curtains 3 m thick. 2 towers in N, 8 x 6 m, walls 1.5 m thick. Postern to the W of one. Masonry well-cut isodomic trapezoidal, quarry face. To the N, outside the main wall a *proteichisma*, ca. 50 m long, 2 m thick. Dakaris 1972 reports Hellenistic tiles and sherds found within the site. Vokotopoulou 1973 calls the site a Hellenistic acropolis.	NF. Assumed at 34 S 452608.00 E 4396029.00 N Z: 370–380 m a.s.l.
86/4 **86/5**	**Kokkinolithari,** **Litharostrougga** **Keramitsas,** **Litharostrougga**	CW	H?	Hammond 1967, 120; Dakaris 1972, 157-158; Mouselimis 2001, 36-37.	2.5 km NW of Keramitsa, on the right side of the road. Circumference 550-600 m, 250 x 40 m, ca. 1 ha. Curtains 1.8–2 m thick. Small quadrangular tower in SE corner, 2.1–2.2 x 3.5–3.7 m, remains of another to the N. Postern, w. 1.2–1.3 m in SW. Masonry isodomic ashlar. Hellenistic pottery found within. Small fortified village according to Dakaris.	NF. Assumed at 34 S 449565.00 E 4393446.00 N Z: 605–610 m a.s.l.
87/4	**"Narrow defile",** **Χτίσμα τού Φατηριού (?)**	F	CH?	Hammond 1967, 92; Mouselimis 2001, 133.	Hammond 1967: "40 minutes N of monastery of Yeromeri…stream (Kalpatiotikos) passes through a narrow defile…blocked by a small fort…60 m of wall beside the stream-bed and by two high spurs of rock."	NF. Assumed at 34 S 441909.00 E 4391217.00 N Z. 130 m a.s.l.

[16] Very confusing localization as the names have changed, some many times. Hammond refers to the site being 45 min to N of Glousta. Dakaris describes the site as being between the villages Plagias (Glousta) and Gardiki as well as the streams Tsouritsa and Langavitsa converging slightly to the S of the site. According to Vokotopoulou the site is located 500 m S of Gardiki (Agios Giorgios). Today, S of Gardiki Filiaton there is no village of Glousta or Plagia(s), but Perama. As the streams converge to the S, this location matches the combined descriptions.

					Mouselimis 2001: 1 h north of Giromeri at a gorge are two naturally protected forts (Θεοτικά κάστρα) on spurs of rock at 30-150 masl, facing each other across a cleft of 30-40 m. In E a 3-sided fort. On one side (which?) a curtain wall, 33 m long, 3.4 m high, cliffs on other sides. Natural fortifications, cliffs, on the W side. Masonry "isodomic" (=ashlar/trapezoidal?), finely cut, still 4.8 m high. Drafted corners.	
88/4	**Qyteza, Dishati**	R	MM	Giorgi & Bogdani 2012, 201-202, figs. 62-64.	SA072 of G & B 2012. Qyteza = Citadel in Albanian. Elliptical rubble enclosure 54 x 22 m, circumference 148 m, area 0.11 ha.[17] Curtain irregularly compartmented, on the N side several jogs projecting 3–3.5 m. Still up to 2.5 m high in places. Entrance in N, 1.2 m wide. Because of the compartment walls within the curtains lacking in similar sites dated to the Iron ag,e Giorgi & Bogdani 2012 dated this as Medieval.	N. G & B 2012: 34 S 430404.00 E 4394762.00 N Z: 648 m a.s.l.
89/4	**Aetos, Çuka e Aitoit, Çuka Ajtoit**	CW	CH	Hammond 1967, 94-95, plate VIa; Bogdani 2006; Ceka 1999, 65-66; Cabanes *et al.* 2008, 88-91.	On the summit of a steep-sided mountain, long and narrow site. Circumference 1160 m, 7.5 ha. Curtains 3.5 m thick, compartmented at 3–4 m intervals. 8 jogs 2.15–3 m deep along the S side, no towers. 4 small posterns; 3 tangential, 1 frontal with strongly curving corridor in S. Masonry quarry-faced polygonal, some trapezoidal. Drafted corners, vertical grooves, drains. Ceka 1999 dates to the IV BC. Cabanes *et al.* 2008 claim 2 phases, I) open settlement, V–IV BC, II) Fortified in IV–III BC. Controls the entry into Pavla gorge and the coastal valley around.	N. 34 S 424807.00 E 4392745.00 N Z: 220 m a.s.l.
90/4	**Malathrea, Malahuna**	F	H	Hammond 1967, 98; Ceka 1999, 64, fig. 58;	A *Tetrapyrgion*, originally 18.5x18.5 m, 346 m². 2 phases.	N. 34 S

[17] Cf. Gourgara (44) and Frosini (48).

				Cabanes *et al.* 2008, 95-97, figs.1-6; Giorgi & Bogdani 2012, 253-254, figs. 34-37; Satellite image.	**I)** A *Phrourion* housing a garrison of 50. Compartmented curtains 1.6 m thick, 4.5 m high. 4 hollow-based towers, 5-5.5 m square, each projecting 2.6 m on both sides. Ground floors on all hollow, floor areas 3.1 x 3.4m, 4 m high. Tower walls built of two faces with no infill, bound by headers. In W a gate, w. 2.5 m, h. 2.7 m. Covered by corbelling[18], closed by portcullis, the 19.5 x 15 cm grooves of which are preserved. In the center a courtyard 8 m square surrounded by mudbrick inner walls. Masonry of the curtains and towers quarry-faced, slightly irregular trapezoidal. Drafted corners. According to Ceka 1999, "IV–III BC, contemporary with Kara-Ali-Bey and Vagalat". Cabanes *et al.* 2008: Ceramics found on site datable to III–II BC, 9 coins of the Koinon of the Epirotes, 232-168 BC. Hollow-based towers and corbelling characteristic of IV–III BC. Giorgi & Bogdani 2012 date to the II/III BC. **II)** Roman villa, with extensions in the E, N and W. Dated by both Cabanes *et al.* 2008 and Giorgi & Bogdani 2012 to I BC.	423269.00 E 4394704.00 N Z: 65 m a.s.l.
91/4	**Vagalat, Vagalati, Bogazi**	T	H (+P)	Hammond 1967, 96, plan 21, 17, pl. V,c & VII,b; Cabanes *et al.* 2008, 94; Giorgi & Bogdani 2012, 194-197, figs. 55-58; Satellite image. Mentioned in Ceka	SA040 of G & B 2012. An L-shaped structure consisting of a tower, uphill of which a straight curtain running towards the summit, long axis SSW-NNE. Compartmented curtain 26 x 3.5 m, on its E side a staircase, 6 x 1.3 m. Tower hollow-based, w. 6.5 m, d. 9.5 m, walls 1.2 m thick. 3 embrasures. 1.55 m wide door opening towards the curtain. Masonry very careful pseudo-isodomic trapezoidal with bulging (not quarry) face, long and narrow (18 courses/ 6.8 m). Drafted corners.	N. 34 S 424785.00 E 4397934.00 N Z: 530–550 m a.s.l.

[18] No textual reference for the shape of corbelling, but most likely a semi-corbel. Cabanes et al. 2008, 95, fig 4. shows a reconstruction drawing/cut-out of the fort, in which the opening is covered with a semi-corbel with diagonal consoles.

				1999, 64 and Karaiskaj 2009, 50.	Not excavated, thus dating is vague: IV–III BC according to Ceka 1999, Cabanes *et al.* 2008 make no statement, Karaiskaj 2009 to the II/II BC and Giorgi & Bogdani 2012 only classify as Hellenistic. A *phryktorion* guarding the entry along the Pavla river into the Prasaebian territory (around Butrint). Above, on the summit are prehistoric round walls of rubble masonry.	
92/4	**Triangular Fortress**	F	RB-MM	Ceka 1999, 61-62, fig.55; Karaiskaj 2009, 95-105, figs. 25-33, pl. 72-85; Satellite image.	Castle built in 1490-1540, to guard the Vivari Channel. Originally roughly triangular in shape, 40 x 50 x 51.5 m, with rounded corners. Later, a round tower was built in each corner. Main gate in the middle of the S wall, w. 1.22 m. A smaller entrance, later blocked, w. 1.08 m, close to the NW tower. Curtains 2.4 m thick, ca. 5 m high, wall-walk at ca. 3.5 m. The settlement of Butrint moved here after 1572.	N. 34 S 416032.00 E 4399638.00 N Z: 1 m a.s.l.
93/4	**Ali Pasha's Castle (Vivari)**	F	MM	Ceka 1999, 62-63; Karaiskaj 2009, 115-120, figs. 38-39, pls. 89-91; satellite image.	Castle built by Ali Pasha sometime around 1807 -1814, to protect the mouth of the Vivari Channel. Rectangular in shape, 30 x 22 m. 2 round towers in the seaward corners, 2 square towers in corners on the inland side. Main gate in the E wall, second gate through the N wall later blocked. Curtains 1.4 m thick, 5.1 m high. Original height of the towers also 5.1 m.	N 34 S 413673.00 E 4399563.00 N Z: 1 m a.s.l.
94/4	**Butrint, *Bouthroton, Buthrotum***	CW	AR-H + RB	Hammond 1967, 99-110; Ceka 1999, 37-38, 53-54; Cabanes *et al.* 2008, 73-76; Karaiskaj 2009, 36-42, 53-55, figs. 13, 20, 44-48; Frederiksen 2011, 134, fig. 26; Greenslade *et al.* 2013, 47-76,	3 concentric wall circuits, 5 phases. **I)** Acropolis walls on S side of the summit, area 0.4 ha. Wall thickness 3.5 m. Irregular jogs or offsets in the S side, no towers. Masonry quarry-faced polygonal, loose seams. Archaic, dated ca. 650–550 BC. Cabanes 2008 dated to the end of VII BC. Greenslade *et al.* 2013 and Hodges 2013 regard these as retaining walls, not fortifications. **II)** Lower enceinte. Area 4 ha, circumference 870 m. Curtains 2.6-3.8 m thick. Jogs, no towers. Enceinte has 6 gates, 4 of which belong to this stage; 1) In N, a tangential "Lion Gate" with	Y, 2005–2010. 34 S 416111.00 E 4399977.00 N Z: 5–20 m a.s.l.

				figs.4.2-4.8, pls. 4.1-4.3; Hodges 2013, 7-10.	consoles and lintel slabs in courses. Corridor 2.15–2.9 m wide, 3.4 m high. 2) Tangential North Gate in NW, w. 2.4 m, d. 5.5 m, enabled admittance of carts. 3) West Gate, with an offset of curtain, 2.15 m deep, on the NW side. 4) In NE the "Lake/Scaean Gate". Corridor 4 m high, 5.25 m long, width 1.5–2.1 m, gate half way across, jamb footings visible. Covered with consoles and lintel slabs. Flanked in S (left side) by a 2 m offset of the wall trace. Masonry quarry-faced trapezoidal, some polygonal. Drafted corners, vertical grooves. Cabanes *et al.* 2008 dated the enceinte to "early IV BC". **III)** Later modifications of lower town walls on the S side: **IIIA)** In SE the "Tower Gate", 2.85 m wide, portcullis grooves in the outer edge of the corridor. Flanked in E by a semicircular tower, w. 8.2 m, d. 15.55 m. In W another tower, 3.95 m square. Ground floors of both hollow with arrow slits. Masonry ashlar, pseudo-isodomic in E tower and isodomic in W, thickness 1 m, regular headers binding wall faces. Cabanes *et al.* 2008 dated to late III BC (230 BC?). **IIIB)** In SW of the enceinte a *diateichisma*, dividing wall added between the settlement and the agora. A short stretch of abbreviated curtain[19] to the W of Asclepeion gate. Curtain 2.45 m thick, backed by rectangular buttresses, 0.82 x 0.86 m, at 3 m intervals. Asclepeion gate, w. 2.8 m, once covered by with a true arch, opens towards S. In the SW corner of the settlement a large bastion, w.17, d. 7 m, aimed towards SW. Cabanes 2008 dated these to III BC.	

[19] Narrow wall with buttresses at regular intervals in the inside, the term by Karlsson 1992, 81-2.

					According to Hodges 2013, phases II-IIIb are contemporaneous. All the fortifications were only built in the late 3rd century, most likely as a consequence of the capture of Phoinike in 230 BC. **IV)** Later modification to the Asclepeion gate, additional courtyard in front of the gate. New arched gate, 2.66 m wide, opens to WSW and covered by a true arch. Cabanes *et al.* 2008 dated to II BC. **V)** Late Antique walls in E & SE.	
95/4	**Kalivo**	CW	P-H, MM	Hammond 1967, 98, 659; Ceka 1999, 63; Giorgi & Bogdani 2012, 258-260, figs. 42-43.	Circumference ca. 2 km, 18.5 ha. Curtains 2.6 m thick. Walls on the landward sides (E, S, W), no walls towards the lake (N). 3 gates, S gate excavated in 2004. Masonry rough quarry-faced polygonal. According to Giorgi & Bogdani 2012, the fortifications were not built before the IV BC despite the site being inhabited from the Bronze age onwards.	N. 34 S 417924.00 E 4400611.00 N Z: 40–50 m a.s.l.
96/4	**Dobra,** **Dobrat**	T	H +MM	Hammond 1967, 96-97; Giorgi & Bogdani 2012, 193-194, fig. 50.	SA039 of G & B 2012. A tower, ca. 6.2 x 6.6 m, surrounded by enclosure walls.[20] According to Giorgi & Bogdani 2012, the fortifications were dated by D. Budina to the end of IV BC, yet the finds, ceramics and coins, to III–II BC.	N. 34 S 424822.00 E 4400895.00 N Z: 75 m a.s.l.
97/4	**Kalaja e Mehalat,** **Mehalles,** **Mehala**	F	MM	Satellite image.	Ottoman castle. Irregular quadrangle in shape. Narrowest side in N, longest sides on E & W. 3 square towers in NW, SW & SE corners.	N. 34 S 431367.00 E 4401525.00 N Z: 130 m a.s.l.
98/4	**Paleomanastër,** **Palio Monastiri**	F	CH	Hammond 1967, 97; Çondi 2007, 153-154;	SA036 of G & B 2012. 3 km W of Karroq on a summit of a ridge. Area 1.5/2.2 ha. Fortifications along NE-SW, cliffs elsewhere. Curtains 155–230 m long, 2.5 m thick. 8 jogs in E, no towers.	N. 34 S 434967.00 E

[20] Hammond calls the tower a “temple”. More likely a fortified farm/tower, cf. Çumpora (112), Metoqi (113) etc.

				Cabanes *et al.* 2008, 98-99, figs.1-2; Giorgi & Bogdani 2012, 190-192, figs. 46-49.	Frontal main gate, w. 2.15 m, in the middle of the E side, corridor w. 2.9 m, l. 6m. Covered by a semi-corbel with convex consoles, 1 console in situ.[21] Postern in S. Masonry quarry-faced pseudo-isodomic ashlar/trapezoidal, drafted corners. Dated to I/IV BC according to Cabanes *et al.* 2008. Controls the confluence of Pavla and its tributary below.	4400242.00 N Z: 380–395 m a.s.l.
99/4	**Shën Gjini**	F	H-MM	Hammond 1967, 97; Giorgi & Bogdani 2012, 188-190, figs. 44-45.	SA035 of G & B 2012. 3 km SE of Karroq on the hill Shën Gjini. Size ca. 80 x 40 m. Walls along the NW side, cliffs elsewhere. Curtains 2.2 m thick, trapezoidal masonry. In very poor condition. Giorgi & Bogdani 2012 argued that the site might be a fortified refuge but could also have a secondary strategic role. Not excavated, roughly dated as Hellenistic. Also Roman, Late Antique and Medieval phases.	NF. G & B 2012: 34 S 438558.00 E 4398590.00 N Z: 300 m a.s.l.
100/4 100/5	**Tsamanta, Tsamanda, Lemiko, Elleniko**	F	A	Hammond 1967, 90; Dakaris 1972, 159-160; Mouselimis 2001, 37.	Acropolis on a limestone hill known as Lemiko (Elleniko), 0.5/1 h S/SSE of Tsamanta above the steep gorge of Pavla. Circumference 0.5 km. Cliffs in E & S, walls on others, preserved only 1.2-1.4 m/4 courses high. 1 jog, 1 tower protecting a gate in SW corner. Masonry isodomic ashlar, "rough hewn". Protects routes leading over the mountains to the Albanian side from the Kalamas valley.	NF. Assumed at 34 S 444429.00 E 4401298.00 N Z: 570–590 m a.s.l.
101/4 101/5	**Lia, Babouri, Kastro**	F	CH?	Hammond 1967, 91, plan 21,9; Dakaris 1972, 159; Mouselimis 2001, 67.	500 m above village of Lia on a spur of Mt, Mourgana. Circumference ca. 400 m. Walls on N side, 1.5–1.7 m thick, cliffs on others. 4 towers, 3 in N and 1 in W, all 4–7 m wide, projecting 3.5–4 m. "Keep" in the SE. Rough masonry, ashlar & polygonal, drafted corners.	Y, 2007, location unclear. Assumed at 34 S 449040.00 E

[21] Seen in Cabanes *et al.* 2008, 99, fig. 2; Giorgi & Bodgani 2012, fig. 49. Similar in appearance to the console in the gate of the Eleutherai / Gyphtokastro fortress in Attica.

					According to Dakaris 1972 one coin has been found within, identified as being from Thasos, dated post–146 BC.	4402193.00 N Z: 930 m a.s.l.
102/4 **102/5**	**Chrysorrachi,** **Zagoriani,** **Akropoli Kastri** **Chrisorrachis,** ***Helikranon***	F	CH	Hammond 1967, 194, pl. XIII,a; Satellite image.	Above and to the W of the village of Chrysorrachi. Fortifications on very steep slopes, SW side less steep. Circumference 900 m, curtain thickness 2.6 m. Two towers “14 paces” square, jogs. The newest satellite image shows that the site consists of two curtains in a very shallow V-shape along the S side. Possibly a semicircular tower at the bottom of the V. Tower bisected by a crosswall. Masonry on the steeper sides polygonal, ashlar on SW side. Drafted corners. Good views of the upper Kalamas basin and the approaches towards Ioannina plateau in SE.	N. 34 S 466680.00 E 4408950.00 N Z: 745 m a.s.l.
103/4 **103/5** **103/7**	**Vela,** **Vella,** **Vellas,** **Paliokastro**	CW	RB/MM	Hammond 1967, 194-195.	On a small wooded hill in the upper Kalamas valley. Two concentric wall circuits, inner 1.4 km in circumference, outer over 2 km. Inner circuit walls still up to 8 m high, 2 m thick. E side protected by 3 towers of varying shapes, S with 2 towers. Outer walls have only 1 round tower. Masonry in both enceintes mortared rubble. “One of the largest sites of Medieval Epirus”. The bishopric of Photike moved here in the Medieval period.	N. 34 S 467015.00 E 4412771.00 N Z: 410–450 m a.s.l.
104/4 **104/5**	**Moni Sosinou**	F	CH	Hammond 1967, 196.	N of village, on a wooded hill on which Monastery of Sosinou stands. Circumference “700 paces”, curtains 3 m thick. Masonry ashlar and polygonal. Good views over the upper Kalamas basin.	NF. Assumed at 34 S 461259.00 E 4410020.00 N Z: 700–710 m a.s.l.

105/4 **105/5**	**Selo,** **Kastro,** **Kalaja e Selose**	F	CH	Hammond 1967, 205-206; Cabanes *et al.* 2008, 131-132, fig. 1; Satellite image.	Opposite to the village of Selo on a ridge called Kastro. Fragmentary curtains on steep hillside, 3.3–3.5 m thick, compartmented at 3 m intervals. 5 towers; one on the summit 6.9 m square with hollow ground floor. Masonry mainly large quarry-faced ashlar, some trapezoidal, polygonal in towers. Drafted corners. Dated to IV BC according to Cabanes *et al.* 2008. Controlled access to the upper Drino valley from the S.	NF. Assumed at 34 S 445051.00 E 4410935.00 N Z: 530–590 m a.s.l.
106/4	**Lidiza,** **Sinou,** **Ripësi**	F	H	Hammond 1967, 90, plan 20,17,pl V,d; Dakaris 1972, 151; Mouselimis 2001, 67; 154-156, figs. 8.10-8.11; Giorgi & Bogdani 2012, 180-182, figs.28-31; Satellite image.	SA022 of G & B 2012. 2.5 km SE of the village of Zëmnec, W from the village of Tsamanta. Circumference 650 m, 2 ha. Cliffs in NE, NW & SW, fortifications only in SE, with 200 m of walls. 2 phases: **I)** Older curtains compartmented, 2.8 m thick. In NE, one right-angled turn and a tower, 5.7 m square(?). In the middle of the SE wall a jog and a postern, w. 1.25 m. Masonry large irregular trapezoidal/polygonal, quarry face. Dated by Çondi 2007 to the end of the IV BC. According to Giorgi & Bogdani 2012 "not before the III–II BC" as the finds concentrate to the late III–II BC. **II)** Younger phase walls in NW, 1.7 m thick, II–I BC. Controls the Pavla valley below.	N. 438809.00 E 4401754.00 N Z: 420 m a.s.l.
107/4	**Zimnec,** **Zëmnec ?**	F?	A?	Hammond 1967, 97; Dakaris 1972, 151.	Hammond 1967: "15 minutes above the village". Dakaris 1972: "15 min. N of the village". 2.5 m thick curtains on 3 sides, 95 m long. Fourth side protected by a precipice. SE the weakest side, with a tower or a gate. Very vague description.	NF. Assumed at 34 S 438242.00 E 4403441.00 N Z: 600 m a.s.l.
108/4	**Duka**	F	CH?	Giorgi & Bogdani 2012, 182-183, figs. 32-34.	SA023 of G & B 2012.[22] Area 0.15 ha. Short stretches of walls running from S to NW, 67 m in total, cliffs elsewhere. Curtain 1.2–1.8 m thick, yet built of two faces and compartmented.	NF. G & B 2012: 34 S 437921.00 E

[22] Coordinates from G & B 2012, 182. Yet the description of the site says the site is located to the *east* of the village of Zëmnec/ Zmineci?

					Tower in the E, projects 2.2 m. Masonry irregular ashlar/trapezoidal (yet fig. 34 shows rubble?).	4404000.00 N Z: 630 m a.s.l.
109/4	**Malçan, Malçani, Maliçan**	CW	CH	Hammond 1967, 97-98, 660, plate Vb, XXVa; Dakaris 1972, 151-152; Cabanes *et al.* 2008, 136-137, fig. 1; Giorgi & Bogdani 2012, 184-186, figs. 37-42 ; Satellite image.	SA028 of G & B 2012. Area 3.5-7.6 ha. Two concentric enceintes on a hill called Iliasi, SW of Malçan. Cliffs in W & SW, fortifications around the E & N sides. **I)** Outer, lower circuit running from S to N in a large bow-shape, length ca. 650 m. Compartmented curtains 3–3.8 m thick. 15 rectangular **towers with internal cross-walls** measuring ca. 7 m square. A "tower-gate" in N tip, corridor through a large hollow-based structure, 12 x 10 m in size. Masonry quarry-faced pseudo-isodomic ashlar and trapezoidal, drafted corners. **II)** Inner circuit on N and E sides of summit. Inferior workmanship. 1 jog, 2 towers, N and NE, "7 by 7 paces". Masonry rubble. Hellenistic and Roman pottery reported on the surface. Cabanes *et al.* 2008: Outer enceinte dated to the B/IV BC, the inner to the IV-VI AD.	N. 34 S 433298.00 E 4406668.00 N Z: 600–630 m a.s.l.
110/4	**Kara-Ali-Bey, Karalibeu, Neohori, *Maiandria***	F? CW?	CH	Hammond 1967, 98-99; Giorgi & Bogdani 2012, 178-179, figs. 26-27; mentioned in Ceka 1999, 64.	SA019 of G & B 2012. Hammond 1967: Circumference "over 1 km". Giorgi & Bogdani 2012: A short stretch of wall built of massive ashlar/trapezoidal blocks in W, some also in S, thickness 3.6 m. Ceka 1999 dated to the IV–III BC, cf. Malathrea/Malahuna. Giorgi & Bogdani 2012 argue for an older date, before the emergence of large cities such as Phoinike, (i.e. before IV BC?).	NF. G & B 2012: 34 S 420305.00 E 4408306.00 N Z: 60 m asl
111/4	**Dema Wall**	L	CH / H	Hammond 1967, 99; Ceka 1999, 67; Cabanes *et al.* 2008, 82; Karaiskaj 2009, 45-	SA006 of G & B 2012. Wall across the Ksamili peninsula, length ca. 1 km. Massive, according to Karaiskaj 2009, between 7-9 m thick (!), with 2.8 m thick stone facings, compartmented at 3-4 m intervals. Rubble core 5 m thick. Stands up to 3.6 m high. Large	N. 34 S 415205.00 E 4407198.00 N

				46, 50, pl 36; Giorgi & Bogdani 2012, 248-249, figs. 23-25.	tower/bastion on the W side, 9.6 m thick, stepped base. Ashlar, tooled face, large and occasional massive blocks (up to 2.5 x 1.5 m). Small clamp holes of unknown shape (5 x 2.5 cm). Ceka 1999 dated to IV BC, Cabanes *et al.* 2008 and Giorgi & Bogdani 2012 to the V BC. On the other hand, Karaiskaj 2009 dated it to "after 232 BC".	Z: 0–90 m a.s.l.
112/4	**Çuka**	T	H	Giorgi & Bogdani 2012, 172-173, fig. 54 on p. 111.	SA013 of G & B 2012. Ruined fortified tower/farmstead, cf. Çumpora (113), Metoqi (115) & Dobra (95). Only tops of some blocks visible on the surface. Masonry quarry-faced ashlar and trapezoidal. Dated similarly as Çumpora and Metoqi, see below.	NF. G & B 2012: 34 S 417712.00 E 4410474.00 N Z: 20 m asl
113/4	**Çumpora, Çuke**	T	H	Hammond 1967, 99; Cabanes *et al.* 2008, 92-93, figs. 1-3; Giorgi & Bogdani 2012, 173-175, figs.17-20.	SA014 of G & B 2012. 3 km S of Sarandë, 1 km from the sea. A tower, 11-12 m square, surrounded by enclosure walls 37 m square. On the S part of the enclosure some additional rooms (for storage?). Central tower entrance a zigzagging labyrinth in S.[23] Intact trapezoidal semi-corbels on internal doorways. Stone stairs leading to upper floor(s). Masonry quarry-faced, slightly irregular ashlar/trapezoidal. Some keyed blocks, masonry of good quality. Possibly one clamp hole of unknown shape, 12 x 9 x 5 cm. According to Giorgi & Bogdani 2012 the tower has been dated to III–II BC, cf. Çuka (112) and Metoqi (113).	NF. G & B 2012: 34 S 417412.00E 4411266.00 N Z: 29 m asl
114/4 **114/6**	**Metoqi**	T	H+RB	Giorgi & Bogdani 2012, 167-169, figs. 51-53, p.110, figs. 5-8, p. 168; satellite image.	SA010 of G & B 2012; their coordinates do not match! Ruins of a fortified tower adjacent to a modern church. Tower 10 m square, surrounded by circuit ca. 40 m square. Built of 2 faces of quarry-faced slightly irregular trapezoidal blocks. Some keying, corners drafted.	N. 34 S 417331.00 E 4414037.00 N Z: 78 m a.s.l.

[23] Cf. the labyrinth in front of the main entrance of the central tower of Nekyomanteion (18).

					Dated to the end of IV–early III BC. Cf. Çuka (112), Çumpora (113).	
115/4 **115/6**	**Lëkurësi Castle,** **Likurs**	F	MM	Ceka 1999, 70; Hodges 2007, 48; Satellite image.	Fortress above and to the S of Sarandë. Square in shape with two round towers in opposite corners, SE & NW. Ruined village of Likurs around the castle, abandoned in 1878 after an uprising. Commands good views over the Ksamili peninsula and the sea. Castle on site mentioned in 1662, current castle built by Ali Pasha in early 19th century.	N. 34 S 416663.00 E 4413315.00 N Z: 240–245 m a.s.l.
116/4 **116/6**	**Sarandë,** **Agioi Saranta, Santi Quaranta,** ***Onchesmos***	CW	RB	Hammond 1967, 111; Ceka 1999, 67-68, fig. 61; Hodges 2007, 21-25.	Late Roman city walls. Area ca. 5 ha, irregular trapezoid in shape with the longest side along the shore. Curtains 2–2.5 m thick, mortared rubble. Quadrangular and polygonal towers, one round. A *proteichisma* on the N side. A fragment of fortification wall lies on the town beach. Dated to the V–VI AD.	Y, 2005–2010. 34 S 415035.00 E 4414286.00 N Z: 5–30 m a.s.l.
117/6	**Finik,** **Mal I Finikut,** **Mali i Finiqit,** ***Phoinike,*** ***Phoenice***	CW	H	Hammond 1967, 112-117, 659, plan 11, pl. VII,a; Ceka 1999, 70-71; Bogdani & Giorgi 2007, 13-30, figs. 1.1-1.18; Cabanes *et al.* 2008, 100-110, fig. 2-4; Giorgi & Bogdani 2012, 85, 169-172, figs. 9-11.	Long and narrow site, long axis SE-NW. Circumference 4.5-4.7 km, 50–66 ha. 4 circuits/phases, A-D: **A)** SE tip of the summit. Walled on both long sides, SW and NE. Jogs, 3 towers and the "Great Bastion" A 39 of Bogdani & Giorgi 2007: An extremely wide rectangular projection of the wall, w. 50 m with a projection of 7 m located half way across the NE curtain. A peculiar stretch of massive trapezoidal masonry, "Laurus Nobilis" in SE part of this circuit.[24] **B)** NW from A, also on the summit, walled along both long sides. The NE walls have a **double outer facing.** Several jogs, 3 towers. Tower B 16 of Bodgani & Giorgi 2007 is built in a junction of two	N. 34 S 419385.00 E 4418634.00 N Z: 100–260 m a.s.l.

[24] Cf. the retaining wall of the Pnyx at Athens. Both bear a close resemblance regarding the size of blocks and the peculiar stepped beveling treatment of the margins of each block.

					curtains, aslant to both. Has **internal cross-walls** dividing the fill to 4+2 compartments.[25] **C)** The largest area consisting of the lower slopes of the hill descending to SW, downhill from A and B and adjacent to C. Enfiladed mainly by jogs, only 2 towers/bastions in SE flanking a frontal gate opening towards SE. Towers ca. 7.1 x 8 m, in between which is the gate corridor 3.5 m wide, the gate at a depth of 5 m. Covered by **true arches** "supporting a tower".[26] **D)** Area known as "Euchorion" occupying the whole NW tip of the hill, adjacent to B and C. Walls on both sides of the summit descending towards the SW. Jogs, no towers. 2 gates at the SW wall. Hammond 1967 dated all to D/IV. Cabanes *et al.* 2008: Early habitation at A including the massive Laurus Nobilis, dated to the early IV BC. Later phase consisting of area D dated to mid-IV BC. Giorgi & Bogdani 2012 dated A (including the Great Bastion and the Laurus Nobilis) to IV BC, but the majority of the walls to II/III BC. Capital of the Chaonians, important trade hub and the wealthiest city of Epirus in the mid–III BC.	
118/6	**Koqino Lithari**	F?	?	Hammond 1967, 120; Giorgi & Bogdani 2012, 226, fig. 91.	SA149 of G & B 2012. Uncertain coordinates, mountain has 3 peaks. Fortifications on 3 sides of a peak, circumference 380 m, curtains 2 m thick. 2 towers, w. 5 m x 2.5–3.5 m in projection. Rough masonry, possibly rubble? Uncertain date.	NF. G & B 2012: 427964.00 E 4415472.00 N Z: 820 m a.s.l.

[25] Identical in layout and design to the towers T 2–T 4 at Pyrgos Ragiou (65) and T 1 of Megalo Gardiki/Passaron (80).
[26] Cabanes et al. 2008, 102-103, who compares this structure with Gates 1, 4 and 5 of Byllis (151) and Gate 6 of Amantia (147). Cf. the east gate of Dodona acropolis (56), paper IV & Chapter 3.2.

119/6	**Dhrovjani, Kastris?**	F? R?	?	Hammond 1967, 120; Giorgi & Bogdani 2012, 224-225, fig. 90.	SA147 of G & B 2012. Hammond 1967: Fortifications "330 paces" in extent. Curtains 1.8–2.5 m thick, rubble masonry. N side best preserved. 1 tower, w. 7.4 m, projecting 3.95 m. Giorgi & Bogdani 2012: Length 230 m, area 0.64 ha. Dating uncertain.	N. G & B 2012: 431993.00 E 4416208.00 N Z: 487 m a.s.l.
120/6 120/7	**Pepeli, Kastro**	R	P-MM?	Giorgi & Bogdani 2012, 277-278, figs. 70-73.	GJ005 of G & B 2012. Elliptical rubble enceinte, area 0.25 ha. Rectangular tower or bastion in NE corner, towards the Drinos valley. Curtains 1.5–2.2 m thick. Masonry of schist plates of irregular sizes, rubble,[27] masonry of the tower/bastion more regular. Dating uncertain, regular masonry in tower could be Hellenistic?	NF. G & B 2012: 34 S 441264.00 E 4414654.00 N Z: 657 m a.s.l.
121/6 121/7	**Ktismata**	F	CH?	Hammond 1967, 200-201, 659, plan 17, pl. XIII,b.	"Entrance (to Drinos valley) is commanded by strongly fortified site SW of the village". Occupies a hill with steep sides, access through a narrow saddle in NE where the hill is connected to others. Circumference "1950 paces". Curtain thickness 3.1 m. 3 large rectangular towers, two of those with double-faced walls and a hollow ground story? Several jogs. Possible postern in SW. Ashlar masonry with rather flat face, not tooled. Located above the Drino with fine views upriver and downriver, controlling the upper reaches of the river. Large site, yet completely invisible in the satellite image.	NF. Assumed at 34 S 447804.00 E 4415951.00 N Z: 460–470 m a.s.l.
122/7	**Kastraki of Agios Minas, Kastritsa, Revnikio**	F	H + MM	Hammond 1967, 269-270; Kastrologos: Castles of Greece.	Medieval fort built on top of ancient remains. Circumference 1.1 km. Cliffs in N, other sides walled, preserved length 253 m. No towers. Gate in S, w. 1.65 m. Older walls irregular trapezoidal with quarry face. Controls one of the routes from Ioannina plateau, good views over the plain below modern Konitsa. Believed to be Pyrrhic, A/III BC.	NF. Assumed at 34 S 471772.00 E 4423739.00 N Z: 710–740 m a.s.l.

[27] Cf. Frosini (48).

123/7	**Mesogephyra**	F?	A?	Hammond 1967, 274.	(Mesogephyra= Middle Bridge). According to Hammond, the site is located within a deep loop of the Aoös, on an isolated hill. Consists of "scanty remains of a circuit-wall 1.5 m wide". Circumference "1050 paces". Masonry ashlar, sandstone blocks. Close by this location, ca. 300 m to the S are remains of a bridge in the riverbed. Very vague description, hill covered by woods.	NF. Assumed at 34 T 465292.00 E 4434986.00 N Z: 360–390 m a.s.l.
124/7	**Oreokastro, Oraiokastro Pogoniou, Lakhanokastro, Kastro**	F	CH + RB/MM	Hammond 1967, 270-271; Kastrologos: Castles of Greece.	Medieval fort built on top of ancient foundations. Located to the N of Oreokastro village and Gormos stream on a location known as Kastro. Circumference 350 m, area 0.8 ha. Ancient curtains ca. 1.9 m thick, fragmentary. Gate, w.3.2 m, flanked by 2 towers in NE. Masonry trapezoidal. Original fort probably Pyrrhic, A/III BC.	NF. Assumed at 34 S 461792.00 E 4426858.00 N Z: 548 m a.s.l.
125/6 125/7	**Melan, Melanit Tekke, Teqeja e Melanit, *Omphalion?***	CW	CH	Cabanes *et al.* 2008, 129-130, figs. 1-2; Giorgi & Bogdani 2012, 299-301, figs. 107-110; Çondi 2018, 537.	GJ038 of G & B 2012. On the right side of the Drino valley on an E-W ridge, the site of Tekke of Melan. Steepest sectors un-walled, fortifications in W, SE, E & NE. Fortified area 3.2/8 ha[28]. 4 towers, 5 x 6.1–6 x 6.3 m, several jogs. 2 phases according to Cabanes *et al.*2008; **I)** Quarry-faced polygonal masonry in S, jogs, drafted corners. Dated to A/IV BC. **II)** Compartmented curtains, 3.2 m thick, masonry quarry-faced isodomic ashlar, dated to 297 BC. According to Giorgi & Bogdani 2012, most of the polygonal walls are terrace walls, and the fortified area is only 3.2 ha. Fortifications built of ashlar masonry and dated to the Hellenistic period. Çondi 2018 argued that this was the central site of Drino	N. 34 S 438462.00 E 4426756.00 N Z: 460–480 m a.s.l.

[28] 8 ha according to Cabanes et al. 2008, 129; 3.2 ha according to Giorgi & Bogdani 2012, 301.

					valley before the founding of Antigonea (136) in 296 BC and again after 167 BC when Antigonea was razed.	
126/6	**Paleokula**	T	RB-MM	Hammond 1967, 119; Giorgi & Bogdani 2012, 223.	SA144 of G & B 2012. Byzantine tower house, *koula*. Cf. Koulia of Paramythia (46).	NF. G & B 2012: 427979.00 E 4423033.00 N Z: 500 m a.s.l.
127/6	**Kamenica**	?	A? MM	Hammond 1967, 119; Giorgi & Bogdani 2012, 222, figs. 87-88.	SA140 of G & B 2012. On a hill of Mali I Kamenicës. Medieval-Ottoman village overlying earlier fortifications, quarry-faced polygonal wall visible in Giorgi & Bogdani 2012, fig. 88 on p. 223. No further information.	NF. G & B 2012: 34 S 418174.00 E 4426138.00 N Z: 383 m a.s.l.
128/6	**Hundësova**	CW /F	H	Hammond 1967, 121; Giorgi & Bogdani 2012, 163-164, figs. 1-3.	SA 004 of G & B 2012. Small fortified settlement or guard station along the road. Curtain in S, 136 m long, parallel to a road downhill. Quarry-faced, carefully cut trapezoidal masonry with notably level top. Mudbrick superstructure?	N. G & B 2012: 34 S 409490.00 E 4425822.00 N Z: 300 m a.s.l.
129/6 129/8	**Kala e Borshit, Kalaja e Borshit, Borshi, Kalaja e Sopotit, Sopoti, *Panormus ?***	CW	CH (+MM)	Hammond 1967, 122; Cabanes *et al.* 2008, 143-145, figs. 1-4; Giorgi & Bogdani 2012, 246-247, figs. 19-21.	Byzantine-Medieval castle, with traces of earlier fortifications around. Earlier enceinte 2.5 ha. Curtains 3.3 m thick, compartmented at 2.5 m intervals. No towers or jogs. A *diateichisma* dissects the site from S to N. Pseudo-isodomic, quarry-faced trapezoidal masonry, drafted corners and vertical grooves. In E the masonry crude, long and narrow. Surrounded by graves dated to the III BC. According to Cabanes *et al.* 2008 dated to I/IV BC, according to Giorgi & Bogdani 2012 "not before the beginning of III BC".	N. 34 T 402456.00 E 4436139.00 N Z: 250–290 m a.s.l.

130/6 **130/8**	**Karosi,** **Qeparoi,** **Kasteli,** **Gradishta**	R	P	Giorgi & Bogdani 2012, 241-242, figs. 15-18.	VL013 of G & B 2012. Steep cliffs in W, 3 walls run in a semicircle course on the E. Walls 2–3.5 m thick, up to 2 m high. Masonry rubble.[29] Dated to Late Bronze Age–early Iron Age, IX BC.	NF. G & B 2012: 34 T 399653.00 E 4437431.00 N Z: 590 m a.s.l.
131/6 **131/8**	**Himarë Castle,** ***Chimaira,*** ***Himara***	F?	CH (+MM)	Hammond 1967, 124; Cabanes *et al.* 2008, 141-142, figs. 1-3; Giorgi & Bogdani 2012, 235-237, figs.3-5.	Byzantine-Medieval castle built on top of ancient ruins. Ancient curtains 3.2-3.5 m thick. Masonry pseudo-isodomic quarry-faced trapezoidal and polygonal, with occasional very large blocks (up to 2.2 x 1.1 m, 1.8 x 1.4 m). Drafted corners. Cabanes *et al.* 2008 dated to V-IV BC. Guards a gorge with a stream to is N.	N. 34 T 391939.00 E 4441602.00 N Z: 180–190 m a.s.l.
132/6 **132/8**	**Pirgu,** **Katafiqi**	R	?	Giorgi & Bogdani 2012, 240, figs. 12-14.	VL010 of G & B 2012. Roundish rubble enclosure, maximum dimensions 25 m.[30] Very uncertain date, could even be modern.	NF. G & B 2012: 34 T 386079.00 E 4444418.00 N Z: 300 m a.s.l.
133/6 **133/8**	**Zhulati**	F	H?	Giorgi & Bogdani 2012, 306, figs. 116-117.	GJ048 of G & B 2012. Ottoman remains, below which traces of earlier walls built of ashlars. Older walls dated to III–II BC. Short, vague description. Fort controlling the river Kardhiqi below.	NF. G & B 2012: 34 T 413633.00 E 4442087.00 N Z: 488 m a.s.l.
134/6 **134/8**	**Kalaja e Kardhiqit**	F	H +RB,M M	Hammond 1967, 215; Cabanes *et al.* 2008, 126; Giorgi & Bogdani	GJ022 of G & B 2012. Pentagonal Ottoman fort on the summit, ancient walls lower down in N and E: Medium polygonal masonry with quarry face in E, tooled facing in N.	N. 34 T 417299.00 E 4442047.00 N

[29] Cf. Frosini (48) and Pepeli/Kastro (119).
[30] Cf. Frosini (48), Pepeli/Kastro (119) and Karosi (129).

				2012, 284-285, fig. 79, p. 284; Satellite image.	Cabanes 2008 dated to I/IV BC based on finds including black gloss ceramics of IV–III BC. Fort guarding river valley of Kardhiki below, and the route leading to Phoinike.	Z: 412 m a.s.l.
135/6 135/8	**Palokastër, Paleokastra**	F	RB	Hammond 1967, 212; Giorgi & Bogdani 2012, 289-290, Satellite image.	GJ028 of G & B 2012. Byzantine fort in the confluence of Drino and its tributary Kardhiqi. Circumference 370 m, area 0.87 ha. Trapezoidal shape with narrowest side in SW, widest in NE. Walls 2 m thick, built of mortared rubble. Also re-used large rectangular blocks of older date. Towers at regular intervals along all sides, square towers in the middle of curtains, round ones in corners. Gate in the middle of the W face. Dated to IV–VI AD.	N 34 T 423159.00 E 4446325.00 N Z: 179 m a.s.l.
136/6 136/8	**Gjirokastër Castle, Argyrokastro**	F	MM	Satellite image.	Ottoman fort, built by Ali Pasha. Extremely long and narrow, long axis ENE-WNW.	N 34 T 426686.00 E 4436239.00 N Z: 335–360 m a.s.l.
137/6 137/7	**Saraginisht, Saraginishtë, *Antigonea***	CW	H	Hammond 1967, 209-211, 659, plan 18; Budina 1987, 161; Cabanes *et al.* 2008, 118-124, figs. 1-7; Çondi 2018, 529-538.	In the Drino valley, high on the hills to the E of river. Circumference 2.6–4.0 km, 41–45 ha. Dimensions ca. 1.1 km N–S, 0.3 km E–W. Consists of 3 areas; **I)** Acropolis in N tip, 150 x 150 m, 2.2 ha. Surrounded by curtains 2.5 m thick also on the city side, separating this from the settlement. Several rectangular towers in N, W & S. Polygonal masonry. **II)** The settlement proper with a Hippodamian grid plan. **III)** In S an empty "reserved area", *euchorion*.	N 34 T 433781.00 E 4437890.00 N Z: 535–655 m a.s.l.

					Both II and III surrounded by city walls 3.7 km long, following the contours. Curtains 2.2–3.7 m thick, compartmented at 2.7–3.1 m intervals. Predominantly rather flat–faced ashlar, some polygonal. Mudbrick superstructure. Estimated height 5 m, 7 m with parapet. Towers rectangular, hollow-based, 4 in W and N 6.5 m square, another 4 in the S wall, 7 x 6.4 m, 61–75 m apart. Near one, a postern 1 m wide. Historically known that the city was founded by Pyrrhus in 297-295 BC and named after one of his wives. Cabanes *et al* 2008 dated the acropolis to IV BC, the rest Pyyrhic; Çondi 2018 dated the whole site, I-III, to A/III BC. According to him the site was the seat of the Koinon of the Chaonians after Melan (124) and was razed by the Romans in 167 BC.	
138/6 138/7	**Kalaja e Libohovës**	F	MM	Satellite image.	Ottoman castle. Nearly rectangular in shape. Towers in corners, octagonal in SW, SE & NE, NW corner tower nearly “keyhole-shaped”.	N. 34 T 437341.00 E 4431501.00 N Z: 465 m a.s.l.
139/6 139/7	**Labovë, Paleokastra**	F	H	Hammond 1967, 209, 585, 660, plan 21, 8 & 16; Cabanes *et al.* 2008, 127-128, figs. 1-4; Giorgi & Bogdani 2012, 295-298, figs. 103-106; Satellite image.	500–600 m S of the village of Labovë e Sipërme. Total circumference 630 m, 1.4 ha. Fortifications in NE & E, other sides have cliffs without walls. Curtains 1.0–1.5 m thick, built with only a **single face**! Still, the wall-walk level is at 5 m, total height of curtains 7 m. 2 towers; Adjacent to a gate is a large semicircular tower with very shallow curvature and a diameter of 8.25 m, the other in SE tip is rectangular, no measurements available. Main gate frontal, 2.25-2.7 m wide. Masonry very carefully cut ashlar, blocks long and narrow, joints beveled. No drafting. Hammond 1967 dated to A/III BC, according to Cabanes *et al.* 2008 the finds from within dated to V–II BC, yet the walls dated	N 34 T 439613.00 E 4435560.00 N Z: 690–700 m a.s.l.

					to VI–V BC. According to Giorgi & Bogdani 2012 the site has 2 phases, the first unwalled settlement in V BC. Fortifications built during the second phase, in the III–II BC. A fort controlling the territory of Antigonea in WNW, the mid-valley of Drino in W and the defile of Selcka to the N.	
140/6 140/7 140/9	**Guri I Qytetit, Përmet**	T	H (+RB)	Cabanes et al 2008, 115, fig. 1.	In the town of Përmet on a steep knoll 12 m high. The summit has a level area of some 15x15 m. On top, a Byzantine fort of V–VI AD fort, below which are Hellenistic remains, III BC. Masonry isodomic ashlar with tooled faces. A signal station or watch-tower along the Aoös.	N. 34 T 444878.00 E 4454191.00 N Z: 239 m a.s.l.
141/8 141/9	**Kalaja e Këlcyres**	F	MM	Hammond 1967, 219; Satellite image.	20 minute walk uphill from the town of Këlcyre. Ali Pasha's castle guarding the Aoös defile, 19th century.	N 34 T 430606.00 E 4462326.00 N Z: 260–280 m a.s.l.
142/8 142/9	**Këlcyra**	F	H (+MM)	Cabanes *et al.* 2008, 113-114, figs.1-4; Satellite image.	On the summit of a crag, uphill from the previous site. Medieval fort, area 0.4 ha. Around the fort are earlier remains. Older fort ca. 0.8 ha. Walls in N, length 180 m. 3 jogs, one flanking a frontal gate in N. Gate corridor 2.3 m wide, 6 m long. Masonry quarry-faced ashlar/trapezoidal. According to Cabanes *et al.* 2008: "Identical to Përmet. Comparable in technique to III BC sites in Drin valley: Pyrrhic "	N. 34 T 430074.00 E 4462325.00 N Z: 450–480 m a.s.l.
143/8 143/9	**Limar**	F?	CH?	Cabanes 2008, 116, fig. 1.	In vicinity of Limar village, on the summit of a hill running S-N. Vague description of whereabouts. W side steep, 40–45° but other sides even more precipitous. Area 1.5 ha, walls in W and partly in N. In W two parallel walls 50m distant. Curtains 2.5 m thick, compartmented at distances of 2.5–3 m. The external wall	NF. Assumed at 34 T 428236.00 E 4458538.00 N Z: 570 m a.s.l.

					has towers, w. 5.5, d. 8.5 m. 2 frontal gates, 1 in each wall. Masonry irregular ashlar/trapezoidal. Site controls the entry to the Aoös valley from the direction of Zagori stream in the south.	
144/8 144/9	**Lekël, Lekli, Shën Mëhilli**	F	CH	Hammond 1967, 212-213, 660; Cabanes *et al.* 2008, 125, fig.1; Giorgi & Bogdani 2012, 286-288, figs. 82-86.	Ca. 700 m SW of Lekli village, above the narrow defile of Drino. Circumference 1.7 km, 1 ha. NW & SE sides protected by sheer cliffs. Fortifications run straight from S to N for ca. 110 m. Compartmented curtain, 3.2–3.4 m thick. 1 rectangular tower, but probably younger than the wall (built of re-used blocks). Masonry quarry-faced isodomic ashlar, some polygonal. Protruding foundation course. Cabanes *et al.* 2008 compare the masonry to Antigonea, (297-295 BC), Giorgi & Bogdani 2012 also date to A/III BC. A fort guarding the entry into the defile of the Drino from the N.	N. 34 T 422368.00 E 4456405.00 N Z: 590–620 m a.s.l.
145/8 145/9	**Tepelene**	F	MM	Satellite image; Mention in Hammond 1967, 220.	Turkish fortifications on a ridge in the NE part of town, above the Aoös. 2 large polygonal towers on S side, gate also in S. Hammond quotes rumors of a Roman fortress having existed on the site called Hill of Helen, the origin of the name Tepelene.	N. 34 T 416822.00 E 4461350.00 N Z: 160–197 m a.s.l.
146/8 146/9	**Matohasanaj, Kalaja e Matohasanaj**	CW	CH-RB	Cabanes *et al.* 2008, 210-211, figs. 1-4.	Area 3 ha. Precipitous sides unwalled, fortifications along the S and N sides. Walls 330 m long in S and 50 m in N. A semicircular tower in SW corner with a diameter of 7 m, and 2 rectangular towers, through one of which opens a postern. 3 phases: **I)** Masonry coarse trapezoidal/polygonal, curtain 3.4 m thick, compartmented irregularly. The semicircular tower and the original unflanked frontal gate, w. 2.85 m, belong to this phase. Dated to II/V BC.	N. Assumed at 34 T 401356.00 E 4468432.00 N Z: 386–408 m a.s.l.

					II) Repairs in SE, masonry isodomic quarry-faced ashlar, curtains regularly compartmented at 2.9 m intervals. Old gate covered by a hollow-based tower measuring 6.6 x 7.55 m. A new gate, 2.4 m wide, opened through its NE flank. Phase dated to mid-III BC. **III)** Later modifications belonging to Late Antiquity.	
147/8 **147/9**	**Kalivaç,** **Kaljivuç,** **Leshnjë**	F	H?	Hammond 1967, 221; Çeka & Muçaj 2005, 92.	Near the village of Leshnjë the Aoös enters a defile called Ylynec, the site is a fort guarding the entry. According to Hammond Kaljivuç means Old Ruin. Circumference 540 m, area 1 ha. Curtains 1.7 m thick. Several jogs, no towers.[31] One postern/gate. Masonry long and narrow/rubble? ("Not dressed"). According to Çeka & Muçaj 2005 the finds from within the circuit consist of pottery dating to the III–II BC.	NF. Assumed at 34 T 399343.00 E 4472427.00 N Z: 360–370 m a.s.l.
148/8 **148/9**	**Ploçe,** ***Amantia,*** ***Abantia***	CW	CH	Hammond 1967, 222-224, 659, plan 20 12, plan 22,1,a,b,c, pl. VIIIb; Ceka & Muçaj 2005, 89-90, fig. 71; Cabanes *et al.* 2008, 204-208, figs. 1-6.	High on the hills to the E of river Shushicë. Very long but narrow site on the summit of a ridge, long axis E-W. Circumference 2.2 km, width "250 paces", area 13 ha. Curtains 2.2–3.3 m thick. Several jogs, no towers. According to Cabanes *et al*. 2008, enceinte has 2 phases: **I)** Trapezoidal & polygonal masonry of "mid–V BC" **II)** Isodomic ashlar masonry, block height 0.6 m. Most of the gates were built at this stage. Gate 6 has a restored **stilted true arch**, 2.7 m wide, corridor 8.5 m long. Grooves for a portcullis visible just behind the arch, no mention in literature. Originally topped by a tower chamber.[32] Phase dated to mid–IV BC.	N. 34 T 389542.00 E 4470653.00 N Z: 510–574 m a.s.l.

[31] Ceka & Muçaj 2005, 92 possibly describe indented trace: "..many-cornered design, in which straight lines and wide-angled turns dominated, but towers were lacking."
[32] "Tower-gate", cf. Gates 1, 4 and 5 of Byllis (153).

149/8 **149/9**	**Mavrovë,** **Kalaja e Mavrovë,** ***Olympe?***	CW	CH	Cabanes *et al.* 2008, 213-215, figs. 1-3.	Site partly under the modern village of Mavrovë. Ancient fortifications have 2 phases: **I)** Original settlement on the N part of hill. 1 bastion, w. 6.6 m. Masonry irregular trapezoidal. Drafted corner. Dated to the "end of V–early IV BC". **II)** Extension towards the S, doubling the area to 16 ha. Circumference 1.5 km. Compartmented curtains, 3.3 m thick. Masonry isodomic quarry-faced ashlar. Dated to mid–IV BC.	NF. Assumed at 34 T 380362.00 E 4473992.00 N Z. 230–240 m a.s.l.
150/8	**"Ericho",** ***Orikum,*** ***Oricum,*** ***Orikos***	CW	H+RB	Hammond 1967, 127; Cabanes *et al.* 2008, 222-224; Shpuza *et al.* 2018, 509-517, figs. 1, 7-14.	On a hill between the S tip of Gulf of Vlorë and the Pasha Liman lagoon. Area 5 ha. Two concentric wall circuits. Curtains 3.5 m thick. 2 towers in the outer wall, one in NE, w. 10.14 m, projecting 2.9/3.7 m. **Double outer facing in tower wall, faces bound by regular headers.**[33] Ashlar masonry with tooled and broached faces, drafted corners. According to Cabanes *et al.* 2008 the finds from the site included black glaze ceramics and terracotta figurines of IV–III BC, while the graves outside the circuit were dated to III–II BC. Shpuza *et al.* 2018 date the fortifications to the II BC and mention that according to Livy the site was unfortified in 214 BC. Abandoned during I BC. Second occupation phase in Late Antiquity, VI–VII AD.	N. 34 T 366494.00 E 4464361.00 N Z: 4–22 m a.s.l.
151/8 **151/9**	**Kalaja e Kaninës**	CW (+F)	H (+RB-MM)	Hammond 1967, 131; Cabanes *et al.* 2008, 219-221, figs.1-5.	Medieval castle, below which are stretches of earlier remains. Circumference 986 m, area 3.6 ha, fortifications follow the contours. Older stretches of curtains 2.3 m thick, compartmented at 2.5 m intervals. 1 rectangular tower in S, measurements unavailable. 1 postern, w. 2.35 m in E tip. Isodomic ashlar masonry with quarry and tooled facings. Mudbrick superstructure, bricks preserved. Brick size 35 x 33 x 7	N. 34 T 374616.00 E 4478143.00 N Z: 320–350 m a.s.l.

[33] It is unclear whether the base was hollow or had filling, cf. Shpuza et al. 2018, 513, figs. 8, 9.

					cm. According to Cabanes 2008 the finds included coins and ceramics from the III–II BC, black gloss ceramics of IV BC and Megarian bowl sherds of III–II BC. A coastal installation of Amantia (148), located 16.5 km ESE.	
152/9	**Gradisht, Hekal,** ***Byllis***	CW	H-RB	Hammond 1967, 225-227; Çeka & Muçaj 2005, 24-29, 33-35, 54-55, 80-81, figs. 2, 17-20, 25, 42-43, 63-64, 66; Cabanes *et al.* 2008, 164-174, figs.1-4b; Satellite image.	3 phases: **I)** Outer enceinte, circumference 2.25 km, 30 ha. In SW an open stretch of ca. 200m with cliffs, fortified elsewhere. Curtains 3.5 m thick, compartmented at 5 m intervals. Mainly enfiladed by 9 jogs, 7 rectangular towers are located at long irregular distances. In NE corner a rectangular bastion, w. 15.5, d. 4.95 m. 6 gates, most of which are tangential, covered by **true arches**. At least 3 have been covered by a tower chamber above the arches: "Gate 5" in S, "Gate 4" in the middle of the E curtain and "Gate 2" at the N tip.[34] Trapezoidal masonry with tooled face. Original phase, dated to B/IV BC. **II)** Modifications: In N a "Fortified Courtyard" was added. In its N tip is a large semicircular bastion, 9.6 m in diameter, with "triple walls to withstand bombardment"(?). To the SE of that, a new tangential "Gate 1", also covered by true arches and a chamber above the corridor. Trapezoidal masonry with tooled face. Dated to 230/219–167 BC. **III)** A new inner wall, "Wall of Victorinus" in the western half of the site. Curtains 2.2 m thick. 6 rectangular, hollow-based towers in the E wall. Dated to the Late Roman period, V–VI AD.	N. 34 T 393280.00 E 4488920.00 N Z: 450–500 m a.s.l.
153/9	**Klos,** ***Nikaia***	CW	CH	Hammond 1967, 224-225; Ceka & Muçaj 2005, 85-87 , figs. 68-69; Cabanes *et al.*	Ca. 1 km SE of Byllis, on a distinct hill with 3 steep sides. Easiest approach along the saddle in W. Circumference 1850 m, 18 ha. Curtains 3.0–3.6 m thick, few jogs, polygonal and trapezoidal masonry with some very large blocks. The walls have level tops:	N. 34 T 394594.00 E 4487011.00 N

[34] Cf. Gate 6 of Amantia (148) and the SE gate of Phoinike (117).

				2008, 175-178, figs. 1-3.	Mudbrick superstructure? 2 towers on W side, one 3.9 x 3.9 m. In NW a tangential gate, w. 3.6 m, l. 4.75 m, flanked by towers. According to Çeka & Muçaj 2005 the site has 2 phases: **I)** Irregular trapezoidal/polygonal masonry dating to the II/V BC. **II)** Ashlar masonry of mid–IV BC. Large site, yet invisible in satellite images. Destruction layer ending the occupation, 167 BC?	Z: 320–340 m a.s.l.
154/9	**Rabie, Rabije, Gradishta,**	F	CH +RB	Ceka & Muçaj 2005, 92-93; Cabanes *et al.* 2008, 190-191, fig.1.	E of village of Rabie. According to Çeka & Muçaj 2005, 2 phases: **I)** Roughly hexagonal enclosure, circumference 240 m, 0.36 ha. Curtains 3 m thick, no enfilading. Tangential gate in SW corner. Masonry polygonal and very large trapezoidal (up to 2.8 x 1.4 m). Dated to II/V BC. Cabanes *et al.* 2008 agree on dating and compare the walls to the fortifications of Klos. **II)** Mortared rubble fortification, dated to Late Antiquity.	NF. Assumed at 34 T 409464.00 E 4482499.00 N Z: 810–819 m a.s.l.

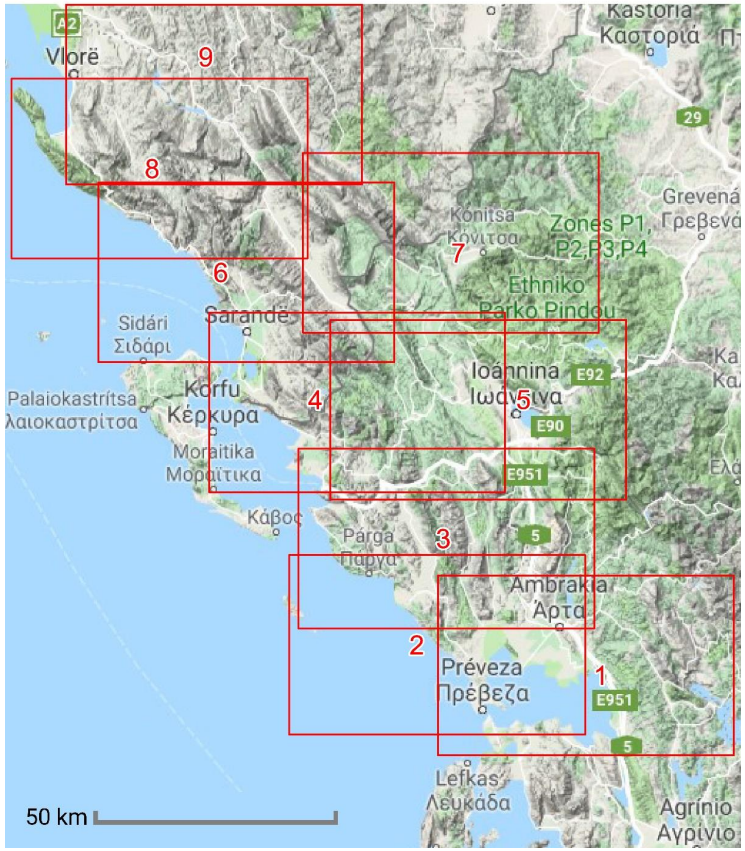

Fig. 1. Index sheet of detailed map sheets 1-9. Map data ©2019 Google.

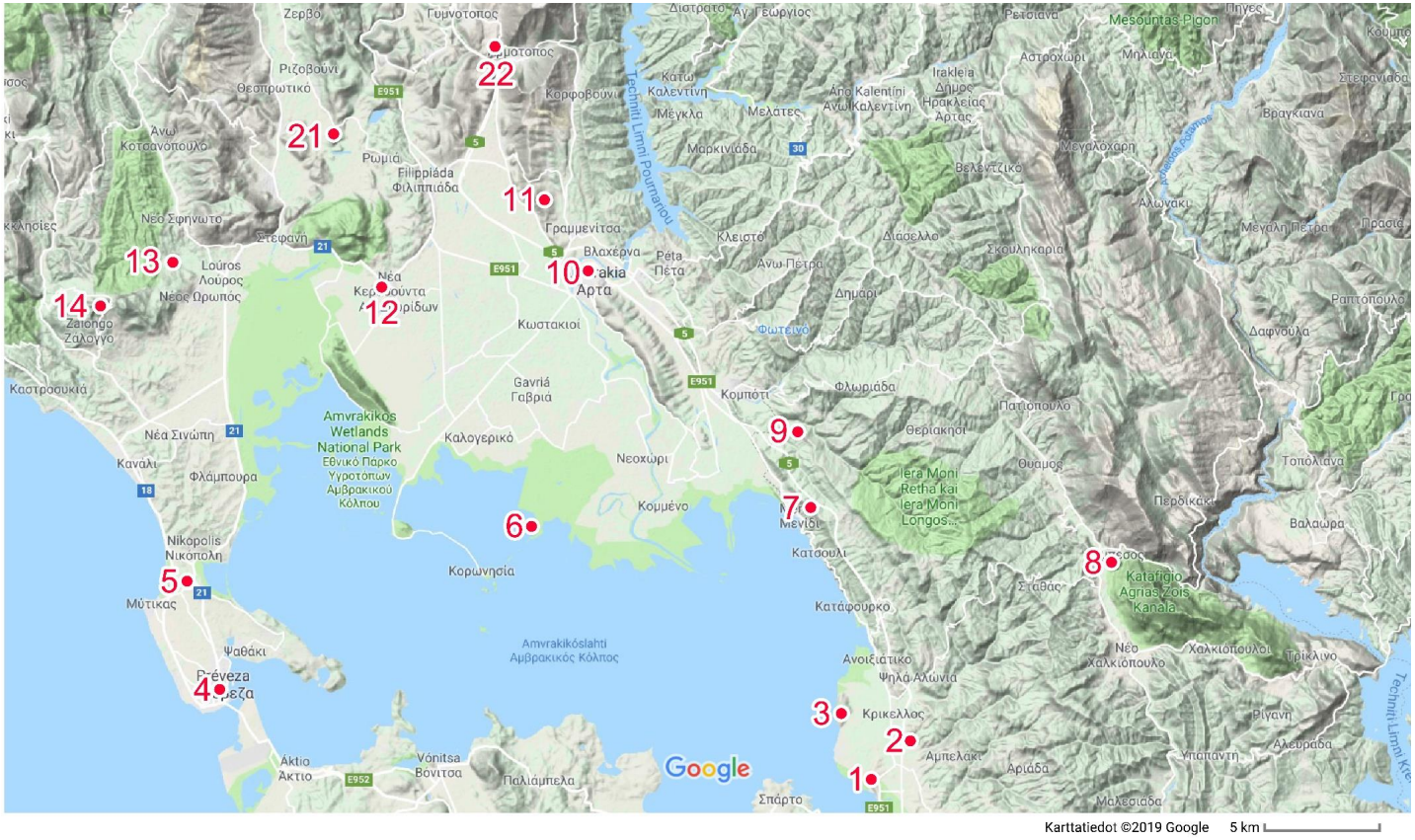

Fig. 2. Sheet 1. Sites in the southeastern corner, Kassopaia and southern Molossia. Map data ©2019 Google.

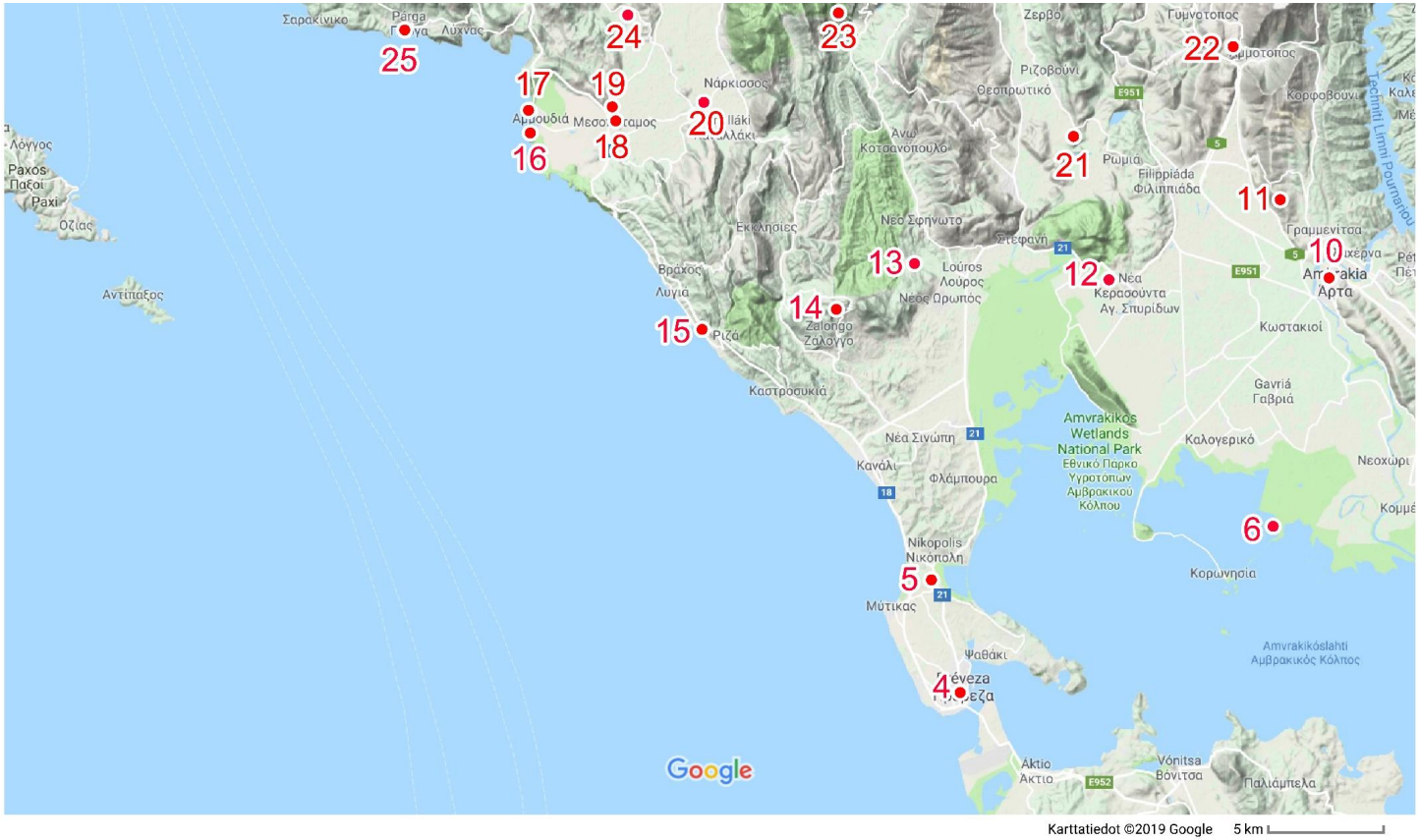

Fig. 3. Sheet 2. Sites in the southwestern corner, Kassopaia and southern Molossia. Map data ©2019 Google.

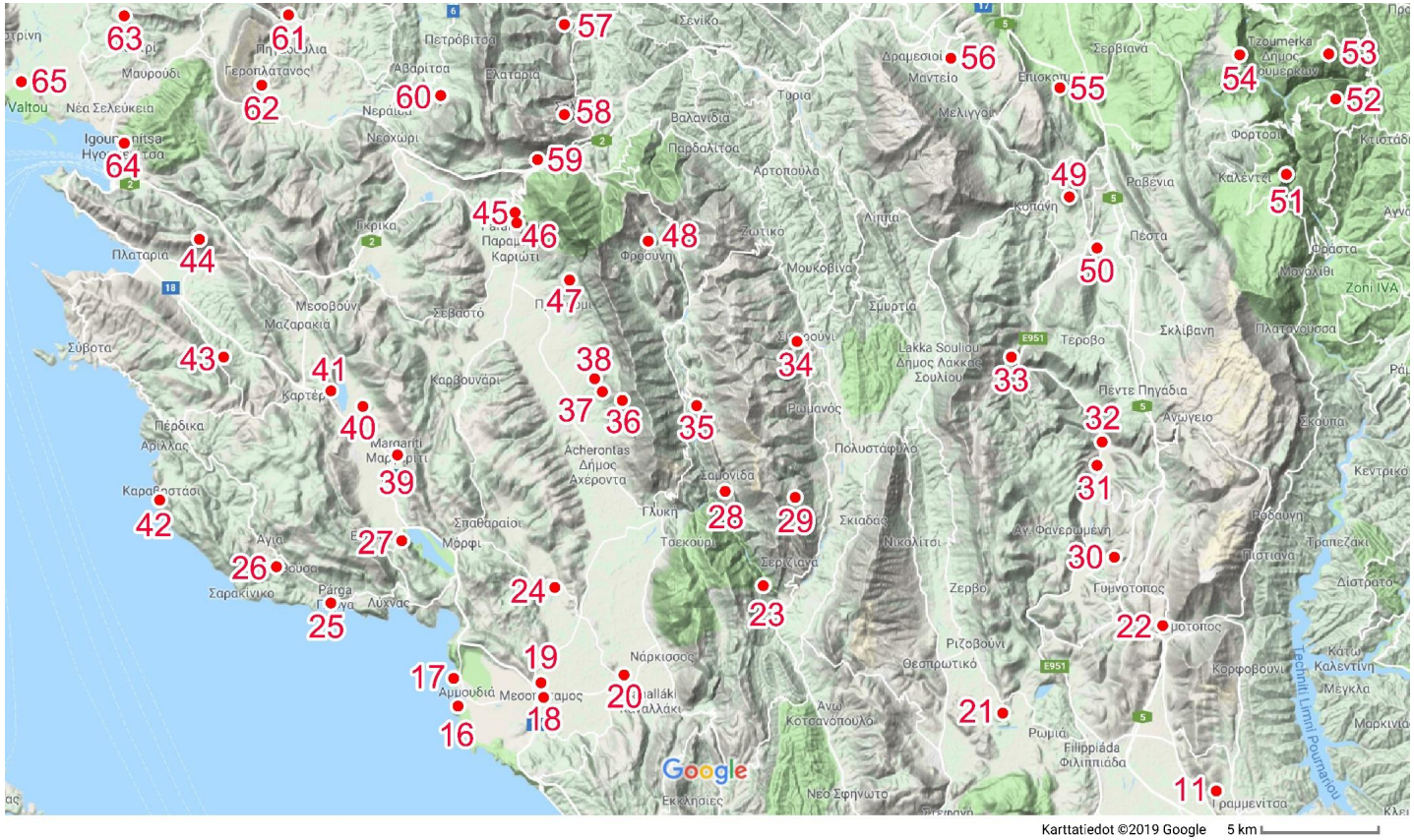

Fig. 4. Sheet 3. Thesprotia and Molossia. Map data ©2019 Google.

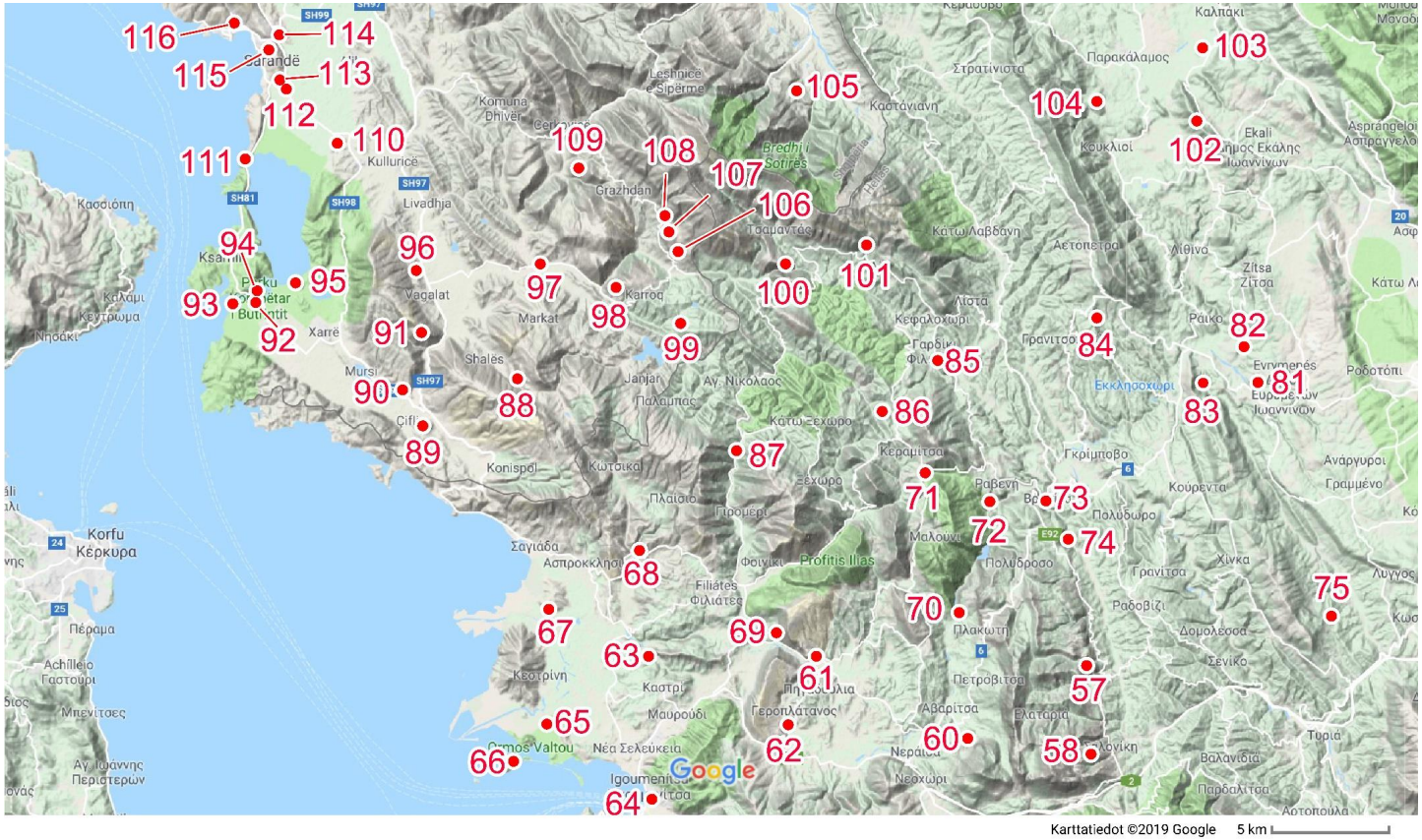

Fig. 5. Sheet 4. Northern Thesprotia and Molossia, southern Chaonia. Map data ©2019 Google.

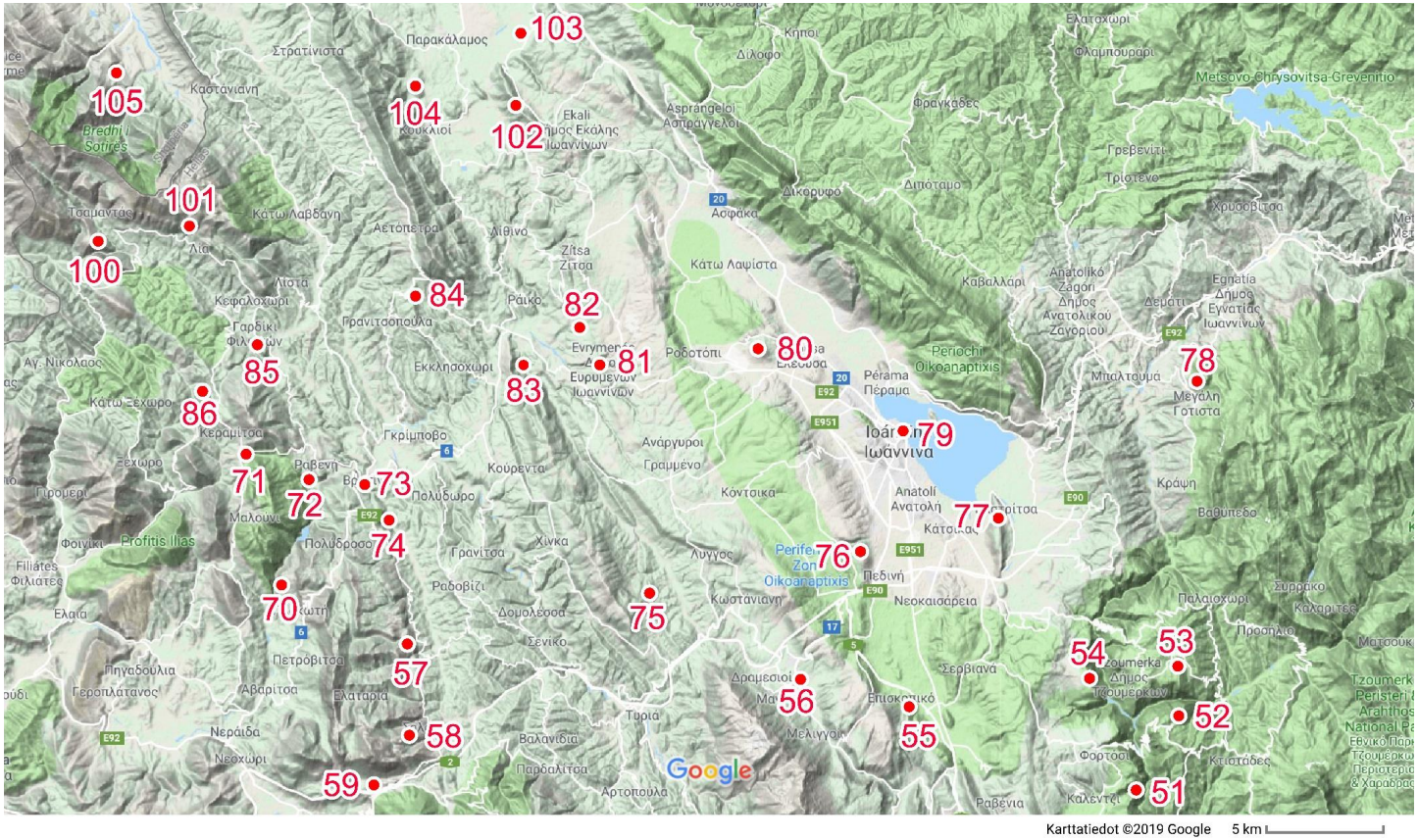

Fig. 6. Sheet 5. Northern Molossia. Map data ©2019 Google.

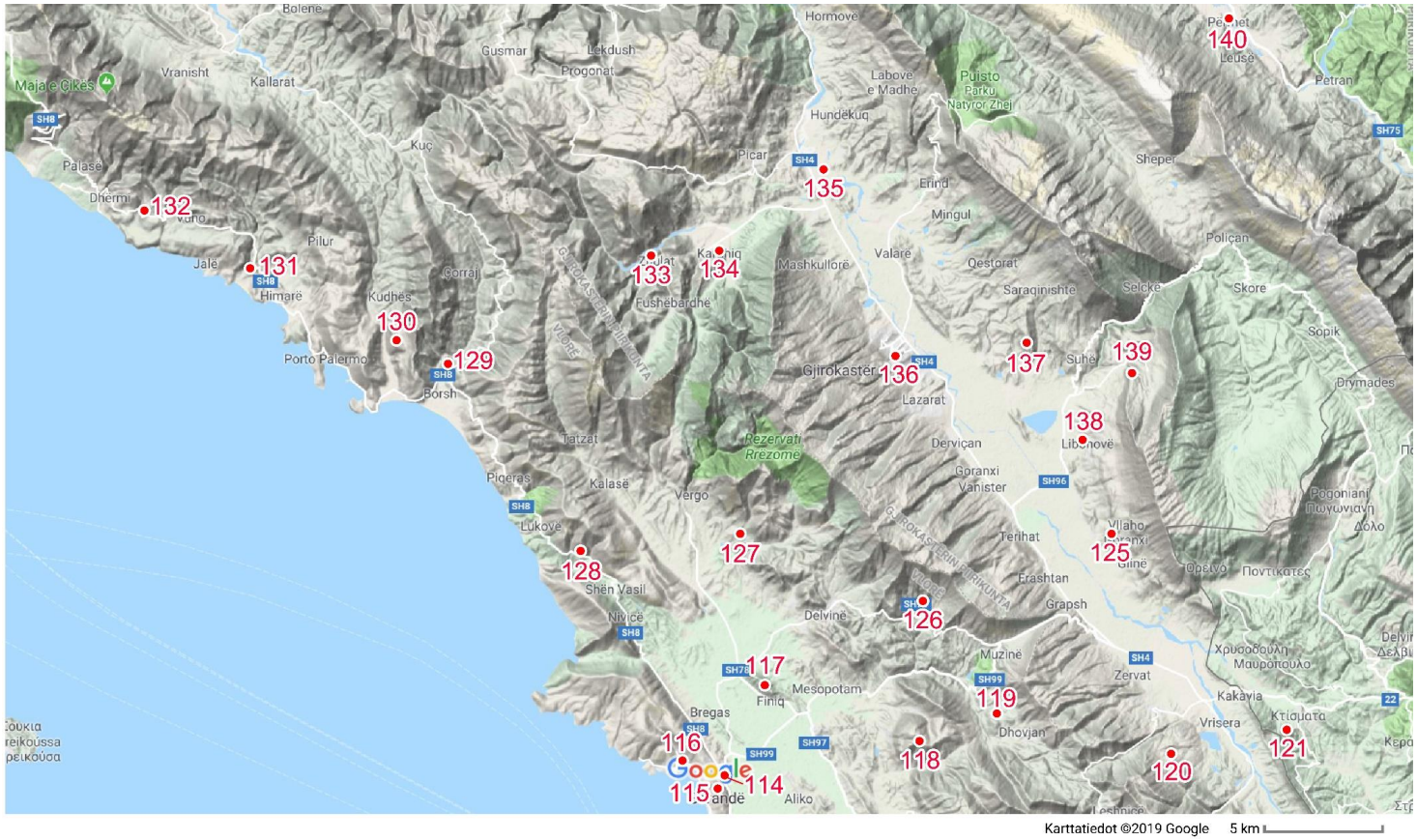

Fig. 7. Sheet 6. Southern Chaonia. Map data ©2019 Google.

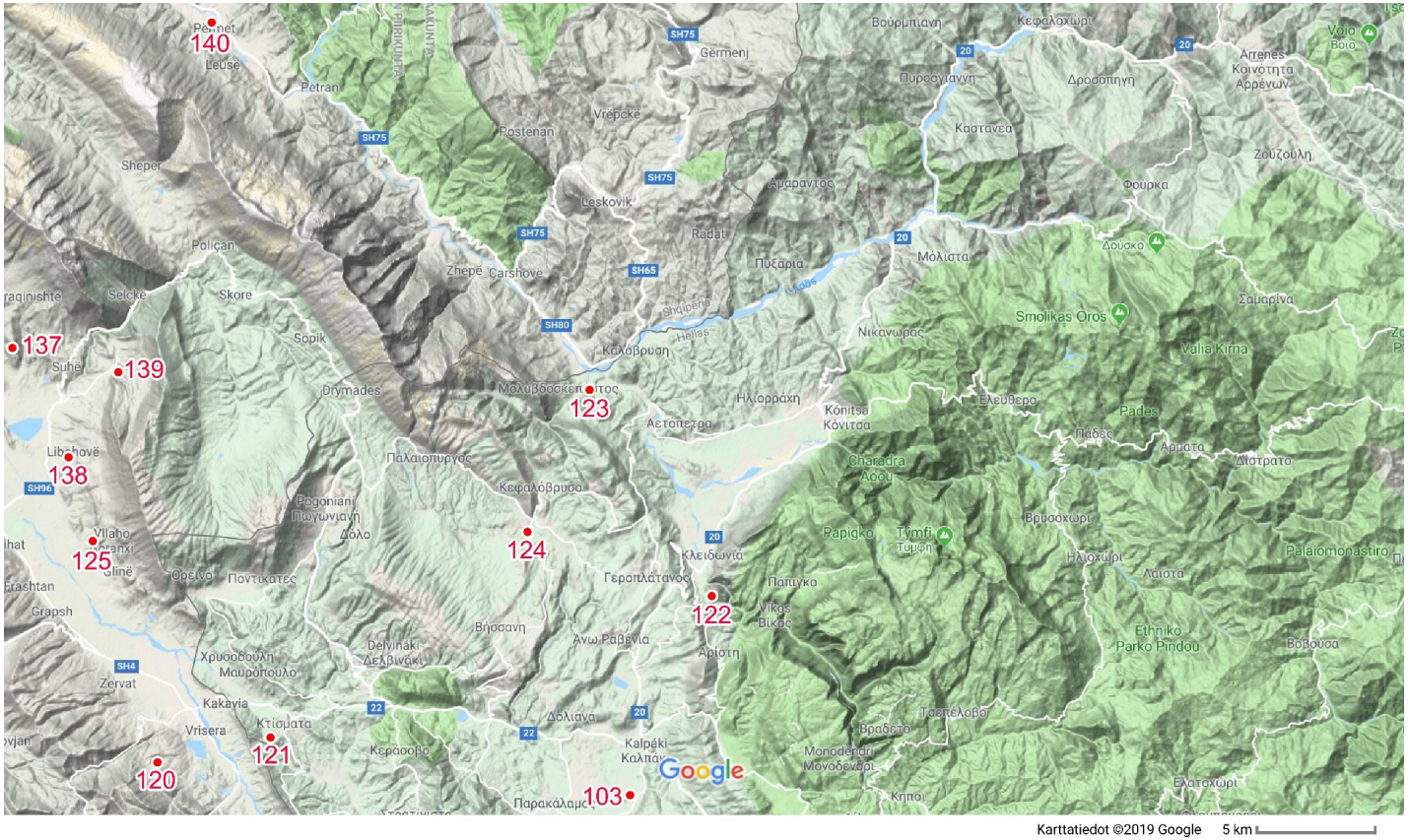

Fig. 8. Sheet 7. Molossia, northernmost tip. The entry of Aoös to Albania. Map data ©2019 Google.

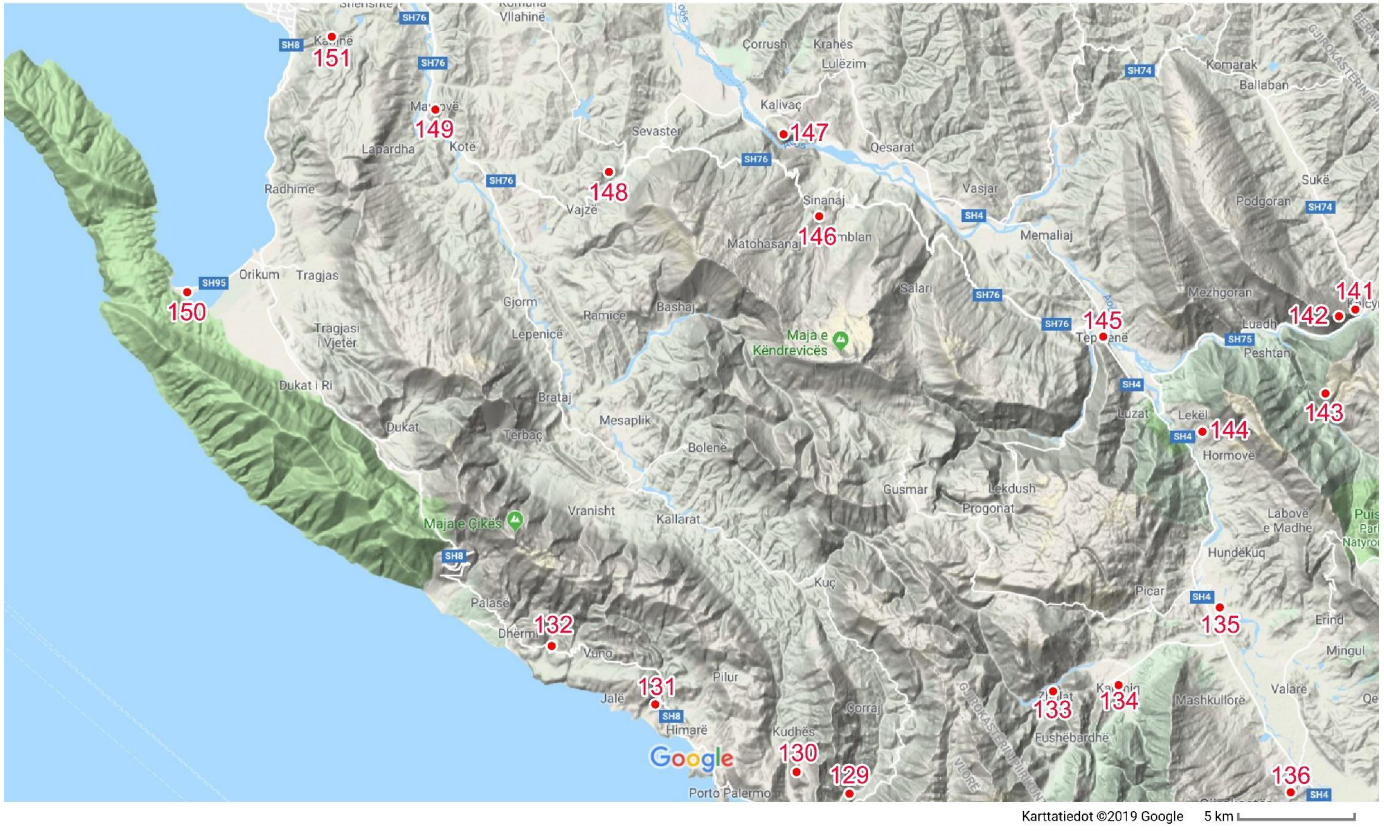

Fig.9. Sheet 8. Karaburun Peninsula, the southern end of Gulf of Vlorë, the Acroceraunian Mountains and the confluence of Drinos and Aoös. Map data ©2019 Google.

Fig. 10. Sheet 9. The northern tip, the border with Illyria. Map data ©2019 Google.

APPENDIX III: WISDOM IN HINDSIGHT. THE FORTIFICATIONS OF AGIOS DONATOS RECONSIDERED

As the M. A. thesis and the resultant first paper examining Agios Donatos were written some ten to thirteen years ago[1] based on my knowledge at the time, I have now come to reconsider some details of the fortifications and revise the reconstruction drawing of the tower.[2] The illustration was based on J.P. Adam's drawing of tower 5 of Kydna, as I believed that it would give the best impression of what the tower of Agios Donatos would have looked like. Since the illustration was drawn in 2006, newer research, published in Paper II, has changed the situation, and it is now apparent that the ground level chamber was used purely for storage and had no defensive function.

The tower (Fig. 1) measures 7.3 m wide by 6.5 m deep, projecting some 4.6 m from the outer facing of the adjacent curtains.[3] The ground floor is hollow, surrounded by tower walls 1.02-1.07 m thick built of two faces of polygonal blocks yielding a room some 4.4 by 5.5 m in extent, with a floor area of 24.2 m². The inner and outer wall faces are bound by headers, and the walls contain no infill as the space in between the backs of the blocks is very narrow, only a couple of centimeters at most. The ground floor was accessed through a door 0.95 m wide, which was located in the southwestern corner.

In contrast to the old illustration, there were no remains of arrow-slits in the south wall of the ground floor chamber, which was excavated down to its foundations in 2007 to expose its total preserved height of 2.8 m (Fig.2). Assuming the lower part of the wall was covered with soil after its completion so that the original floor level was at ca. 234.50 m a.s.l., the still-standing part of the wall reached a height of circa 2 m above the floor with no evidence remaining of the slits. While it is possible that there were slits in the badly preserved eastern wall– in the masonry courses that have now disappeared– there were no remains to suggest this. As for the unexcavated northern wall, this was covered by fallen blocks and debris, with nothing reminiscent of a slit visible in the remains.

[1] M.A. thesis written in 2006–2007, the subsequent Paper I, based on the previous, in 2008–2009. The same illustration based on the work of J.P. Adam was utilized in both.

[2] Suha 2009, fig. 3.

[3] The photo and all the illustrations excluding Fig. 2 are by the author. Fig. 2 is based on the map by Jari, Tuula & Aleksi Okkonen 2005.

Figure 1 Agios Donatos, east facade of the fort, seen from the east before the excavation. The southeastern gate across the flank of Jog 1 is in the extreme left. Progressing towards the right, the tower is the mass of tumbled blocks in the third quarter of the photo. Photo by M. Suha 2005.

Figure 2 The ground floor chamber near the end of excavation in July 2007. No arrow slits or other apertures pierced the walls.

Naturally anything above the currently standing remains must remain purely speculative, but I will risk presenting a new reconstruction drawing. The ground floor chamber would obviously have been more than 2 m high, as

even the highest preserved parts of the south and west walls bear no indication of cuttings for the joist holes. The beams supporting the next floor would most likely have run from southeast to northwest, across the depth of the tower as that is the shorter stretch to span.[4] Perhaps the joist holes were located above the next, absent masonry course or even above the following course. In that case, the ground floor storage chamber would have been some 3–4 m high. Alternatively, there might not have been joist holes at all in the walls, as the wall thickness of the upper chambers could also have been decreased slightly to form a ledge along all sides on which joists could have rested.

The curtain walls on either side of the tower had foundations resting directly on the uneven bedrock, the curtain foundation level being located roughly on the same level as the floor of the chamber. I estimated the height of the 1.9 m thick curtain walls as some 8 m in total, consisting of the curtain wall (6 m high) topped by the wall walk, *parodos,* which was protected by the breastworks or *parapet*. Here the parapet most likely had the form of a level-topped screen wall, *epalxis,* perhaps 0.5–0.6 m thick by 2–2.5 m high. The screenwall would have been pierced by shooting apertures at intervals; in this case, there would not have been a need for larger openings. With the assumed curtain height of 6 m, there would have been room for a 3-m -high "first-floor" chamber above a ground floor chamber of a similar height. The first floor chamber would have been located on the upper part, level with the curtains, and accessed either by a trapdoor and ladder from the chamber below, or from the inside of the fort through a door in the back wall. This chamber could have had firing slits, with their sills located at an altitude of some 3–4 m from the outside and thus safe from escalade. In the reconstruction drawings (Figs. 3-4), all of the apertures through the 90 cm thick tower walls and a 50 cm thick screenwall have an external width of 12 cm, a height of 80 cm, and an internal width of 1 m, thus having wide fields of fire.[5] There would have been room for a single slit of such proportions on each side wall, and for a pair of such in the wider eastern wall. The roof of the chamber would have coincided with the

[4] The depth of the chamber was 4.4 m as opposed to the width of 5.5 m. Beams measuring some 5 m long would have been more easily available than those exceeding 6 m. Additionally, the floor would have been less flexible using shorter beams.

[5] I chose these dimensions for the apertures based on Adam 1982, figs. 73, 90– 97, which show the measurements of one of the towers of Messene adjacent to the Arcadian Gate, and several towers of Kydna. In most illustrations the external widths of the slits are missing, but when they are indicated the width varies between 11–18 cm, being on the order of 16–18 cm in Messene and 11–13 cm in Kydna. The inner widths of the apertures are indicated frequently, ranging from 92 to 116 cm in Messene, piercing a wall 66–77 cm thick, while in Kydna the corresponding widths range between 45 and 80 cm, across walls that are 80–100 cm thick. The slit heights in both sites vary from 70–100 cm, but the majority are ca. 90 cm high. As Kydna is chronologically closer to the period of the most likely building date of Agios Donatos, as are also the measurements of tower walls, I based the apertures mostly on the example of Kydna.

height of the adjacent wall-walks. An unlikely possibility is that the blind ground floor chamber would have stretched all the way to the wall-walk level as that would have made the chamber impractically high at 6–7 m. Such a structure just does not make sense, whereas a first-floor chamber, on the other hand, would be sensible.

Regardless of the case, there would certainly have been a chamber on the wall-walk level (Fig. 3). It could not have been accessed straight from the adjacent wall-walks as the total width of the curtain walls on either side was only 1.9 m, which is too narrow to allow for a door between the 0.5 m thick parapet and the back wall of the chamber. Thus, a door in the back wall would have been necessary. In order for the patrolling soldiers to circumvent the tower and reach the entrance, a wooden walkway on supporting scaffolding, *ikria,* would have been necessary. In Fig. 3, the *ikria* has a width of 1.4 m, corresponding to the thickness of the wall-walks of the adjacent curtains. The chamber doorway is 0.95 m wide, corresponding to the preserved ground floor doorway. The tower walls are slightly narrower at 90 cm thick, as opposed to the 1.02–07 m found in the ground floor chamber.

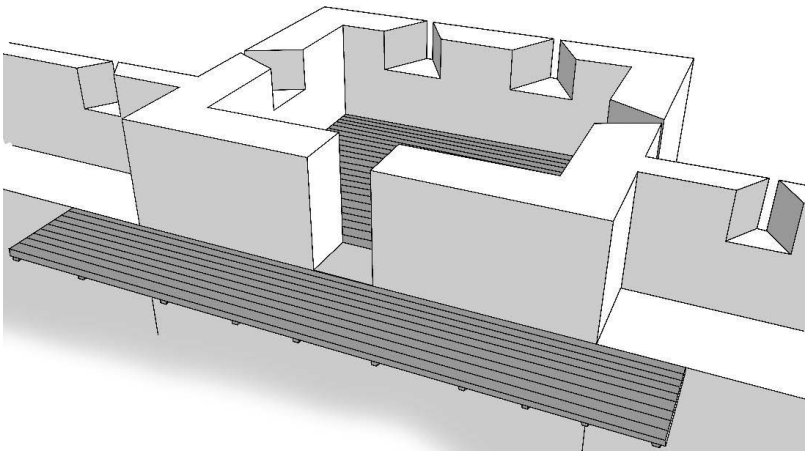

Figure 3 A hypothetical cut-out of the main defensive chamber at wall-walk level. The upper levels of the walls above 1.8 m are left out for clarity's sake. Seen in the foreground are the 1.4 m wide wall-walks on the sides, and the *ikria* in front, which was required to circumvent the tower. The doorway is 0.95 m wide, and the chamber walls 0.9 m thick; all apertures have an external width of 0.12 m and an internal width of 1 m. Illustration by M. Suha 2019.

This would have been the main defensive chamber, capable of housing several catapults of the smallest caliber.[6] For these, a chamber height of some 2–2.5 m would have been sufficient. There might have been another chamber of similar proportions above this, which was accessed from the chamber below

[6] For weaponry options, see Suha 2019b, 117.

via a trap-door in the floor. For the uppermost chamber, a similar wall height would have sufficed if the wooden roof on top was hipped, with all four sides set at the same angle. However, why would a hipped roof shape seem a more probable choice? A gabled roof with the pediment resting on the wider walls would have resulted in an excessive height in the middle of the field side while the shorter sides would have been lower. This would, of course, have enabled the placement of a single large caliber catapult in the middle of the top chamber, albeit with only a restricted field of fire, in addition to perhaps one smaller weapon on either side to enfilade the curtains. However, this seems improbable. I argue that the armament would have consisted of the smallest caliber weapons requiring only small loop holes and thus a hipped roof with level topped walls on all sides would suffice, and would also enable the placement of four of these in the upper chamber.

With two lower floors corresponding to the height of the curtains, both some 3 m high, topped by two defensive chambers at the wall-walk level and above (both some 2-2.5 m high), and the whole structure covered by a hipped roof (adding perhaps another 2 m), the total height of the tower would have been some 12.5–13 m (Fig. 4). Regarding whether there would have been three or four floors in the tower, I am more inclined to believe the second alternative with four chambers, three of which having a defensive purpose as the more likely layout.

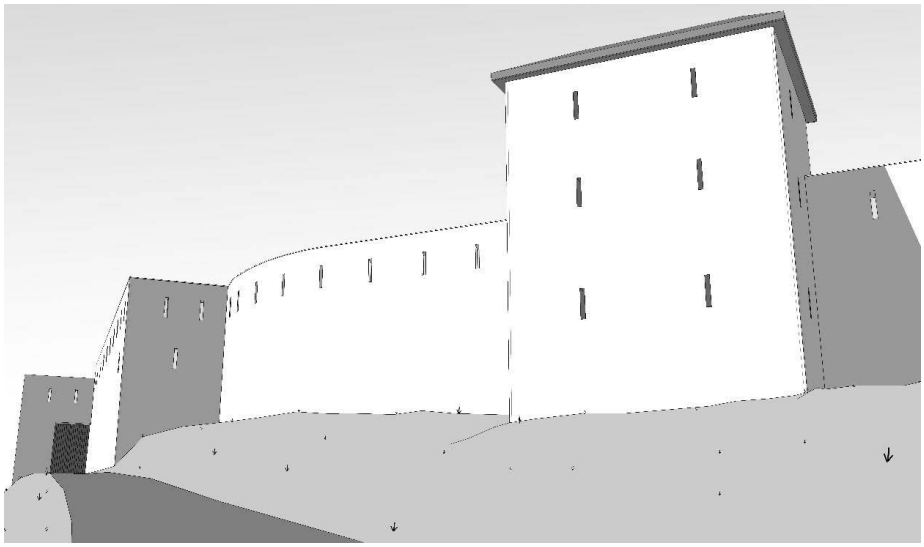

Figure 4 Hypothetical reconstruction of the east facade of Agios Donatos, showing the tower with four chambers and topped by a hipped roof. The main gate across the Jog 1 is at the extreme left, enfiladed by the neighboring Jog 2, which also has apertures on the internal ground level (cf. Paper II). The orientation is looking towards the west. Illustration by M. Suha 2019.